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welcome

ears ago, when I was on the antiques, I was helping a dealer to load a large break-front bookcase into a Luton van when he happened to remark – between breathless gasps – that if he ever had his time again, he'd be a dealer in watches and jewellery. 'Yeah,' he said, 'just put the stuff in your pocket. The most you'd have to carry around would be a briefcase.' True, but then the grass is always greener... and there are bound to be drawbacks to that particular trade, drawbacks like armed robberies and gold fever, so maybe the odd bit of backache isn't such a hardship after all.

Straight and narrow

I generally carry my furniture around in pieces, sometimes 8 x 4ft board-sized ones I've just finished a very tall cupboard in a place over my way. Housing a variety of electricity distribution boards, telephone terminals, cable TV boxes, routers and all sorts, it reaches up to the ceiling and is essentially a tall narrow cupboard on top of a shorter one. I'm very pleased with it. Its softwood panelled doors and mouldings all blend in nicely, and it's brought instant order and tidiness to the hall.

Raindrops keep falling

The job itself was not without incident, and I discovered yet another way to slip up. My time on site seemed to coincide with the height of the recent Sussex monsoon season, and working outside was nearly always out of the question. As I didn't war to fill the freshly decorated house with sawdust, I left the chopsaw behind in the workshop. The fact that it weighs about 25kg may have had something to do with my decision, but the bottom line was I would cut all my moulding mitres by hand, just like the old days.

The wrong angle

Now this is hardly a revolutionary step, but anyone who has cut dadoes and cornices on a 22.5° mitre knows the pitfalls. Things were going very well, and I was just offering up the last piece of dado when I realised I'd set it all upside down, and there was no way it would match the existing ones. With a resigned sigh I pulled it all off and started again.

So it is with carpentry sometimes. You do what you think is some great work, only to have it all go pear-shaped and then you're back to square one. The joke – and I'm sure it's not just me – is there always seems to be a new version of an old mistake just round the corner, waiting to trip you up and start you thinking of an easier way of making a living. The thing is, would you be any happier without woodwork? I think not.

mark

You can contact Mark on mark.cass@mytimemedia.com



If you can't always find a copy of the magazine, help is at hand! Complete this form and hand it in at your local store, and they'll ensure that a copy of each issue is reserved for you. Some stores may even be able to arrange for it to be delivered to your home. Just ask!

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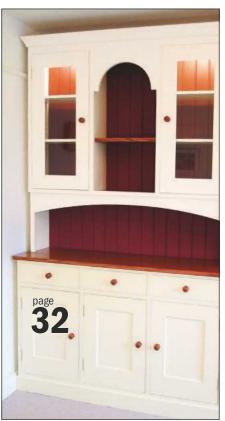


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Voodwor

January 2015

Published by MyTime Media Ltd Enterprise House, Enterprise Way, Edenbridge, Kent TN8 6HF

Tel: 0844 412 2262 From outside UK: +44 (0)1689 869840 www.getwoodworking.com

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BACK ISSUES & BINDERS Tel: 0844 848 8822

From outside UK: +44 (0)1332 912894 Email: customer.services@myhobbystore.com Website: www.myhobbystore.co.uk

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The Woodworker & Woodturner, ISSN 1752-3524, is published monthly with an additional issue in summer by MYTIME MEDIA Ltd, Enterprise House, Enterprise Way, Edenbridge, Kent TN8 6HF, UK.

The US annual subscription price is 59GBP (equivalent to approximately 98USD). Airrieght and mailing in the USA by agent named Worldnet Shipping Inc., 156-15, 146th Avenue, 2nd Floor, Jamaica, NY 11434, USA.
Periodicals postage paid at Jamaica NY 11431. US Postmaster: Send address changes to The Woodworker & Woodturner, Worldnet Shipping Inc., 156-15, 146th Avenue, 2nd Floor, Jamaica, NY 11434, USA.
Subscription records are maintained at CDS GLOBAL Ltd, Tower House, Sovereign Park, Market Harborough, Leicester, LE16 9EF.

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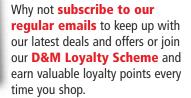
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In brief...

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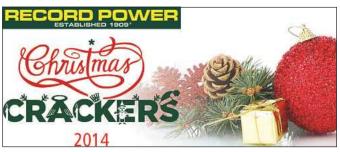
For people with limited space in the workshop or for use on site, this folding compact router table is a godsend. The stand is made from heavy-gauge steel section with a black powder-coated finish. The rear leg assembly opens to form a rigid A-frame that will close flat. The router table



top can also be folded flat against the frame, so the complete table can be stored against a wall.

The router table measures 604 x 400mm. A standard 19mm aluminium T-track is fitted into the table top for an optional mitre gauge. The fence has a rigid steel back plate and uses a pair of aluminium alloy T-tracks for precise location. A pair of adjustable in- and out-feed fences can be opened and closed, allowing cutters of various widths to be used. The price is £154.96.

www.axminster.co.uk



Christmas presents

The Record Power Christmas Crackers 2014 promotion is now available, offering some incredible savings. In addition, there are several brand new package deals, offering even greater value for money, including:

- RP2000-PK/A RP2000 and remounting jaws package;
- CL3-CAM-PK/A CL3 lathe package deal with RPLB24-48 lathe bench;
- TS315-PK/A 10/12in cast iron saw with squaring table;
- RPCV12A-PK/A 12-piece carving chisel set;
- BM16-PK/A BM16 mortiser with chisel and bit
- TS250C-PK/A 10in cast iron cabinetmaker's saw with right-hand extension.

Please visit the Record Power website for full details of these offers, or look out for the brochure inside copies of The Woodworker.

www.recordpower.co.uk



Einhell delay

In our December issue we gave details of the forthcoming launch of Einhell's new Power X-change range. We've now heard that the launch has been held back until March 2015.



We'll have several of these new tools to give away as soon as they become available - probably in our April issue, which goes on sale on March 13th. Watch this space!

www.einhellpowerxchange.co.uk



The right angle

Hitachi Power Tools has launched its new DN18DSL/L4 angle drill. With a lightweight and compact design, it weighs in at just 1.7kg and has a low centre height of 23mm for easier working in confined spaces. The drill has an impressive torque of 12Nm, controlled by a variable-speed paddle switch, and features an LED worklight and battery life indicator. User comfort is increased by a soft-grip body, and a detachable side handle gives extra control. The tool features a 10mm keyless single-sleeve chuck and a handy belt hook.

The drill accepts all Hitachi 18V Li-ion slide batteries from 1.5Ah to 5.0Ah, and is backed by a three-year warranty that's activated when the tool is registered online within 28 days of purchase.

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Liberon's new Exterior Wood Protector is a quick-drying clear finish ideal for both vertical and horizontal timber surfaces. It's water- and UV-resistant, making it suitable for fences, pergolas, garden furniture, sheds and summerhouses. The clear finish will not alter the natural colour of

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In brief...

Plane sailing

Over the past few years, making a wooden plane has experienced a revival in popularity. With this kit from Veritas (and some basic woodworking skills), it's now possible to build a beveldown, wooden-bodied smoothing plane with ease.

The kit includes a blade, a Norris-style adjuster with a steel cup to seat it in, plus knobs, a tapped insert and a cross pin for the lever cap, all made of brass. The



lapped blade is over 3mm thick and just over 41mm wide, with a 25° bevel.

Any hardwood blank measuring 200 x 56 x 62mm or larger can be used. As the tool is constructed in the workshop, there's an opportunity to customise the size, the shape or even the bed angle of the completed plane. The kit is available with a choice of blades; the O1 and A2 versions both cost £46.96 and the PM-V11 one £51 96

www.brimarc.com



Roll out the barrel

A North Yorkshire teenager has secured himself a unique position with one of the UK's best-known breweries. Ashley Thompson from Thornton Watlass has joined Mashambased T&R Theakston Ltd as the country's only breweryemployed apprentice craft cooper. The 19-year-old will serve his planned four-year

apprenticeship under the tutelage of Theakston's existing craft cooper, Jonathan Manby.

During his apprenticeship, the former Bedale High School pupil who has worked for the legendary 'Mouseman' joiners Robert Thompson's – will learn the intricacies of an ancient trade, which is being kept alive by the brewery known worldwide for its Old Peculier ale. We'll drink to that!

DIARY

JANUARY

Axminster Skill Centre courses

13 Penmaking

17 Sharpening hand tools *

19-20 Wood machining

20-21 Beginners woodturning *

22 Bandsaws

26-27 Beginners routing

27 Penmaking *

29 Fine-tuning hand planes

30 Sharpening tools

31 Spindle moulding *

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While shepherds watched

An historic part of the countryside is being brought back to life by Scotland's leading furniture design school. The humble shepherd's hut was once a common sight across much of the British countryside, allowing farmers to watch over their flocks by night, particularly during the lambing season.

The traditional hut was a small one-room structure with cast-iron wheels and contained a bed for the shepherd, some basic amenities such as a stove, and feedstuffs and medicines for the animals. The project by the Chippendale International School of Furniture has just completed its first 21st century version, which will be furnished with a wood-burning stove.



The Chippendale School believes that there are new markets for the huts - everything from home offices and spare bedrooms to outdoor gyms, storage sheds or workshops and is now taking commissions for bespoke models. Prices are available from the Chippendale School, and depend on interior fit-out and configuration.

www.chippendaleschool.com

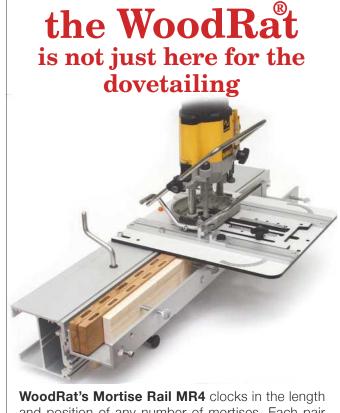


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OUR ANNUAL SHOW BREAKS NEW RECORDS!

We'd like to say a huge thankyou to everyone who attended our 14th annual show in October and helped to make it the most successful to date.

Visitors travelled from all over the UK to attend the exhibition of hand tools, power tools and woodworking machinery which took place over the weekend of the 10th-12th October at Kempton Park Racecourse in Sunbury-on-Thames.

Manufacturers and visitors frequently tell us that this free event is the highlight of their year. The latter eagerly anticipate the opportunity to get their hands on the latest products from all the leading brands in the industry, and to take advantage of the exclusive show deals and special offers.

New product launches included the Vecturo OS400 multi-tool and the TSC55 cordless plunge saw from Festool, plus the new wireless battery system from Bosch, ahead of its UK roadshow debut. Woodworking experts including Alan Holtham, Julian Collins and 'The Gentleman Joiner' Christopher Hall were demonstrating and providing masterclasses throughout the weekend.

Make a date now for next year's show, which is on **9th-11th October 2015**. More details are available on the dedicated show website **www.thetoolshow.com**



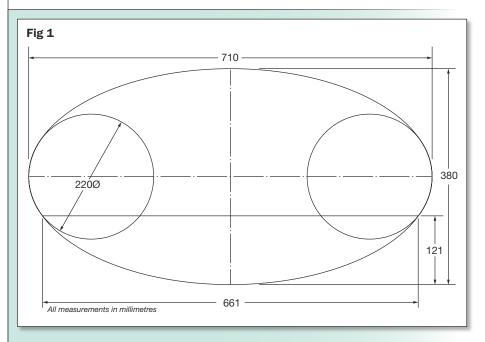




BY DUNCAN ROSE

TRIPLE **ELLIPSE**

I have a large wall-mounted TV, and needed somewhere to place the attendant Humax receiver and a DVD player. Off-the-shelf media stands seemed dull and ordinary, so I decided to design something a little more striking



MEDIA STAND CUTTING LIST All dimensions are in millimetres					
Part	Qty	L	W	T	
Shelf	3	710	380	18	
Base leg	3	100	35 dia		
Spacers	6	82	35 dia		
You will also nee	d nine nylon drawer f	ront adjusters and	d nine 100mm M4 hol	te	



considered lots of design ideas for the stand, and drew out the better ones using my CAD system. They would all tidy the two boxes and their cables out of sight, but tended to look too dominant. I really wanted a more discreet solution. This final design was sketched out on the back of an envelope. It's a compact design, with soft shaping to avoid straight lines and corners that would draw the eye.

The perfect solution

The stand I created consists of three elliptical shelves, each supported by three legs. The finished appearance is compact



and interesting, with the boxes off the floor and the wires concealed. The stand adds to the room without becoming a major feature, smoothly blending into the space. The organic arrangement of the shelves and legs adds to an attractive retro look.

This project is easy to make, with just a few components and needing only a small selection of tools. The shapes can be changed: just use your imagination, adjusting dimensions and positions to suit you and your equipment boxes.

Selecting the stock

You can make the shelves using many materials – plywood, hardwood, a mixture

of species for each shelf – or simply use up some offcuts. I used spruce furniture board purchased from my local DIY shed. This has a pale colour, is easy to work and although it's not particularly tough it's more than sufficient for this project.

The boards are available in various dimensions. Select them carefully, as the quality and condition of the sealed packs can vary. Some boards have more knots and some may have more cupping, or simply have damage from knocks in transit. I made the legs for the shelves from a 2.4m length of 35mm diameter pine dowel, the largest diameter stocked at my local shed.

Making an elliptical template

Start by producing an exact template of your preferred shelf shape. Although this is not strictly necessary, it enables the same shape to be easily redrawn when marking out all three shelves prior to cutting.

I made my template from an offcut of 18mm thick mdf because it's easy to mark, cut and sand smooth. Begin by marking out the ellipse shape you want on the mdf. An approximate oval is easily drawn in three straightforward steps.

Step 1 Mark a pair of perpendicular straight lines that intersect at their centres, representing the width and height of the



Mark the ellipse's width and height lines on the template and draw a circle at each end



Rough-cut the template close to the marked outline using a bandsaw or a hand-held jigsaw





Mark the profile on the first furniture board and cut it out, working just outside the line

ellipse. For this project the ellipse is 710mm wide and 380mm high.

Step 2 Next draw a circle 220mm in diameter at each end of the 710mm line, photo 1. I used a medium-sized dinner plate, but compasses will do the job if you don't have a suitably-sized plate.

Step 3 Complete the oval by marking a pair of large arcs on the template. Position the centre of each arc at the ends of the

380mm line and draw the arc so it just intersects the circumference of the two circles. I drew the arcs using the bow-andstring method. I made the bow using a 1m steel ruler fitted with a length of nylon cord, and tensioned it using a spreader to set the required arc profile. The arc dimensions are shown in fig 1 on page 14. Hold the tensioned bow in position on the mdf and mark the pair of arcs, photo 2.

Now cut out the template, sawing about 1mm on the waste side of the outline. I used my bandsaw, but a jigsaw will also work well, photo 3. Then sand the template edge back to the line until it is smooth to the touch.

Cutting the boards

Start by placing the template on the first spruce board and arrange its position to give the best shelf appearance. Then draw round the perimeter of the template. Repeat for the other two shelves,

Rough-cut the shelves to size, sawing just outside the marked outline, photo 4, and sand the edges smooth back to the line. I finished the edges with some careful hand sanding using grit grades 120, 180 and 240 until they were clear of scratches.

Choosing a jointing method

I looked at several options for jointing the shelves and legs together, including long screws, keyhole plates or table leg fixing plates. I finally settled on some hardware called drawer front adjusters, photo 5. These enable pairs of shelves, separated by short legs, to be held together while keeping the tops unblemished. Each adjuster consists of a 20mm diameter plastic body with barbed retaining sides. Inside the body is a metal M4 threaded insert which allows several millimetres of lateral movement when loose.

I used the adjusters with 100mm M4

bolts. About 5mm of the bolt will connect into the adjuster, as it passes through the 82mm long legs and 13mm of shelf.

Preparing the legs

I made the legs from 35mm diameter pine dowel. Before cutting the nine legs, sand the whole length; this is much easier to do now. I sanded it using a power sander while simultaneously rolling the dowel on the workbench, **photo 6**. I followed this by hand-sanding in the direction of the grain.

Cut the legs to length next. You can reduce breakout by wrapping low-tack tape round the cutting lines, photo 7. The three lower legs are made 18mm longer so their fixing bolts will be the same length as for the other legs.

Drilling the legs

Drill a 5mm diameter clearance hole through the centre of each leg, ideally using a drill stand for accuracy. I marked the hole centres using a simple home-made centre-finding jig, photo 8. It consists of a thin plywood plate with two strips of wood pinned on at right angles along the plate edges, with a 45° slot cut into the plate.

To use it, place the jig on the dowel with the wood strips butting against the dowel and draw a line on the dowel through the jig slot, photo 9. Then rotate the jig by 90° and draw a second line. The dowel centre is where the two lines intersect.



I used nylon drawer front adjusters linked by M4 bolts to connect the shelves to the legs

Sand the dowel for the legs smooth with a power sander while rolling it on the workbench



Use low-tack tape round the cutting lines to reduce breakout while cross-cutting the dowel



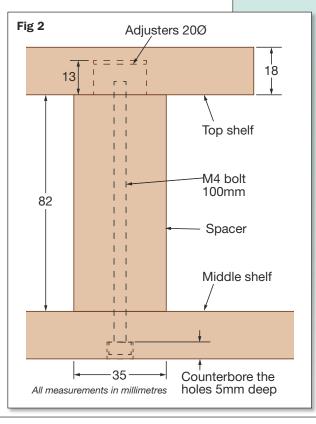




Place the jig on the dowel and mark a line through the slot. Rotate it through 90° and repeat









Drill a 5mm hole through each leg and add a counterbore in the bottom end of the lower legs



Choose your ideal shelf and leg arrangement and mark the leg positions on the shelves



Counterbore holes 5mm deep on the underside of the two upper shelves



Drill 20mm diameter stopped holes in the shelves to take the drawer front adjusters



Knock in the adjusters using a block of scrap wood until they are flush with the shelf surface



After a final sanding, apply three coats of water-based varnish to the various components



Assemble the stand by screwing the bolts into the adjusters, and check that the legs are vertical



Drill the holes slightly oversize to ease the insertion of the long M4 bolts during assembly. I drilled a hole in each end of the legs so they met in the middle; this also helped correct any wandering of the drill bit.

Next, drill a counterbore 5mm deep in the bottom end of the lower legs so you can recess the heads of their fixing bolts, **photo 10**. During assembly, if the counterbore depth needs adjustment, you can either increase its depth further or reduce it using some M4 washers.

Time for a mock-up

Now dry-assemble the unit and choose your favourite shelf and leg arrangement, ideally by placing your black boxes on the shelves. I was surprised how the overall appearance was altered with only subtle changes to individual shelf and leg positions.

When you're happy with the arrangement, carefully mark the leg positions on the upper and lower faces of the shelves, **photo 11**. Before dismantling the assembly I also marked the underside of each shelf with its position in the stack sequence.

Back to the workshop

Now you can drill the shelves with holes for the fixing bolts and drawer front adjusters. Start by drilling 4mm bolt holes in the lower two shelves where the legs sit on the upper face of the shelf. Centre the holes using the locating marks made during the mock-up. Then upturn the shelves and counterbore the holes 5mm deep, **photo 12**.

Next, fit the drawer front adjusters to the underside of the shelves. Again use the leg locating marks to find their centre positions. Then drill holes to hold the adjusters and insert them. I cut the holes 20mm in diameter and about 11mm deep using a Forstner bit, photo 13. The adjusters are a firm push-fit and need knocking in until they're flush with the shelf face, photo 14. I applied some pva adhesive to the barbs for extra grip, especially as this is only softwood!

The final stages

After checking the shelves and legs for marks and blemishes, I gave them a final sanding and applied three coats of water-based varnish, **photo 15**, cutting back with fine abrasive paper between coats. The water-based varnish helps to keep the natural colour of the wood true with minimal yellowing.

Finally, assemble the stand, starting at the top of the stack, **photo 16**. Make sure that the legs are vertical by using the movement provided in the adjusters before tightening the bolts fully.

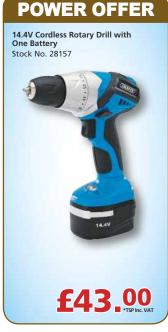


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BY KEITH SMITH

Barn door 1

You'd think that fitting a new front door was a pretty straightforward job. It is, unless you live in a listed building as we do. **Then the Conservation** Officer comes to call...

hen we bought our house back in 1999, one of our main priorities was to replace the old front door, photo 1. The door opening is wide but low, and the builder had got round the problem by fitting a shortened frame, photo 2, covering it on the outside by adding two substantial strips of oak to fill the resulting gaps, and by hanging a standard door which he cut down to size, through the joints!

In my defence (of taking more than ten years to start the job), we don't use the door very much and found it very difficult to come up with a design that worked. In the end it turned out not to matter what we thought. The house is listed, so the Conservation Officer decided on the style of door we should have, giving us little say in the matter.

Style is all

His opinion was that as we lived in a converted barn we should have a door that looked like a planked shed door. We weren't even allowed to replace the door 'like for

WOODWORK Insulated oak door



The existing front door was a cut-down panelled version with a single central glass panel

9

The width of the opening had been made up by adding a substantial strip of solid oak at each side



3

Preparing the parts; the head, sill and an outer jamb have their domino slots cut



I cut some domino slots wider than others to give extra leeway during the assembly



The narrow frame rails are made up from three separate components for ease of manufacture



The three components of the glazing bar are now ready to be jointed in position



You need a special router cutter to form the double slot required for the door seals

like' with a similar-styled panelled door.

This was a problem, because a planked door has all the grain running vertically. This means that the door will expand and contract across its width far more than a panelled door does. This might be fine for a draughty barn, where it doesn't matter if the door fits or not. However, for a modern house which should have thermally efficient draughtproof doors, it wasn't very practical.

We then waited several years for him to move on or retire, thinking that a different Conservation Officer would probably have a completely different idea of what sort of door should be fitted. This year, with no sign of him leaving and rain now regularly penetrating the door and frame, we reluctantly had to accept his design.

Guiding light

The challenge then was to design a door which looked like a boarded door, was stable in construction and would survive extremes of weather. The door has no protection from the elements and, as it faces south-west, is subject to extremes of sun, wind and rain. It also had to be thermally efficient, draught-resistant... and had to have a letter box, which is a major problem with boarded doors.



I created the same wider slots to attach the short glazing bards to the frame jambs

A further complication was that our existing door had a small window which gave the only natural light in our hall, but the Conservation Officer insisted that we could not put any glazing in the new door. However, he was willing to let us part-glaze the very slim frame and allow us to fit a short middle rail to the door so that we could have our letter box.

Designing the door frame

The overall dimensions of the opening are 1220mm wide and 2030mm high. This is quite a bit wider than a standard opening. However, glazing the frame became more



I assembled the side frames in sections, starting with the rails and glazing bars



You can see here how the composite glazing bars work, as they await their dominos

of a challenge when we were told that we had to glaze both sides of the frame, as just glazing one side would make the door look too 'urban'. This meant we had to design a slim frame which would be still strong enough to support the weight of a very heavy 65mm thick oak door.

After some head scratching, I came up with the idea of laminating some parts of the frame and using dominos (small loose tenons) for some of the joints. Normally I wouldn't consider dominos as suitable for exterior joinery at all, but in this situation they would allow me to spread the load right across the joint without cutting large mortises which would weaken the slim frame.



With the first side frame assembled, it was time to start putting the second one together



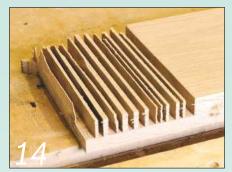
The door is laminated in two sections, so the parts must be machined to very tight tolerances with no snipe at the ends of the boards. To avoid this, I normally machine them overlong and trim 100mm off both ends

Fancy a sandwich?

It's possible to buy door blanks, which are basically a plain sided door, and to apply a thick veneer to both faces. With a blank it's possible to create almost any design, as the blank itself carries all the strength and structure of the door. In our case though, the door is a very odd size and so I decided to make the door in two halves (inside and out), insert insulation between them, and then glue the two halves together.



One advantage of laminating the frame is that the tenon doesn't need to be cut through the stile; here I've cut the top rail where it will be fitted into the stile in a modified half-lap joint



With a joint as big as this, it's easiest to remove most of the waste by running the wood over the table saw

Building the door frame

I'm not going to go into too much detail with regard to the frame construction, as it's highly unlikely that anyone will ever make an identical copy. I think it will be more useful to look at the general method of construction, as it would be possible to apply some of these techniques to other styles of door frame which could be especially useful if a relatively thin glazed frame is required.

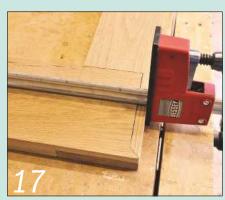
In **photo 3** you can see some of the frame parts on the bench; an outer jamb, the head and the sill after the joints have been cut. Both inner and outer jambs are tenoned into the sill with twin through tenons, and these will be wedged when the frame is assembled. Likewise the jambs are also tenoned into the head.



Then carefully clean the face with various planes. The bottom rail has the same shape, but the rail itself is much thinner to allow the vertical cladding to run in front of the rail



I cut the corresponding half-lap joints in the two stiles which have been temporarily clamped together. This time I used a router to remove most of the waste



This is the resulting joint on the inside face of the frame. An added advantage with this type of joint is that there is less end grain exposed at the top and bottom of the door



The middle rails, which will house the letter box, are dovetailed into the stiles to provide some additional mechanical strength



It was now time to dry-assemble the frame of the door. You can see here that the middle and bottom rails are thinner than the top rai



A deep rebate in the external face of the two top rails will allow me to screw the vertical boards in position. The final stage is to cut a groove round the inside edge of the frames to house the vertical boards

Versatile dominos

The inner and outer jambs are connected by three glazing bars and by substantial top and bottom rails. These rails run the full depth of the frame, and I used nine dominos of various sizes to join them together. Photo 4 shows the slots cut with my Festool Domino jointer; you can see that the bottom three slots are wider than a normal domino.

The jointer is able to cut three widths of slot for each cutter; they call this 'waggle', and it's normally used to create some leeway when fitting multiple dominos in line. I used the widest machine setting for these slots, and for extra strength and durability I made my own loose tenons from oak which were wide enough to completely fill the slots.

Piece by piece

The narrow rails are made up from three pieces of timber, photo 5. This is mostly to aid the precise positioning of the dominos, but it's also a lot easier to make them in three sections rather than to try cutting this shape accurately from one piece of timber. I used the same technique to attach the

glazing bars to the jambs. Photo 6 shows the wider domino slots for the external facing piece - an 8mm slot for the core piece and a 10mm slot for the thicker inner piece of oak. Photo 7 shows the various parts of the glazing bar; making it from small components makes it easier to get very close-fitting joints.

Before the frame is assembled, any slots for weather seals need to be cut. I used Aquaseal seals, and have a router cutter specifically designed for cutting the double slot required. However, it's only just long enough to cut the slots in the deep rebates needed on such thick doors, photo 8.

Open time

I have to admit that the actual assembly process for this frame was a bit of a nightmare. There are so many parts, and they all have to be aligned perfectly if the frame is going to fit together correctly. My decision to use a polyurethane adhesive, with its relatively short setting time, meant that I had to assemble the side frames in sections.

I started by gluing the rails and glazing bars to the outer jamb, photo 9. Once the glue had cured I cleaned any excess adhesive away from the joints, photo 10, dry-fitted all the remaining dominos, and checked that the slots in the inner jamb lined up with these dominos; almost inevitably, a few were a little out!

This is not a major problem so long as they're not too far off line. I just chamfered the ends of the offending dominos to allow them to slide easily into their slots. It was vitally important to ensure that every domino would fit easily as, once glue was applied, it would have been disastrous to find that the frame wouldn't go together.

In photo 11 you can see I'm embarking on the second side frame, with the first frame fully assembled on the floor next to the bench. With both side frames completed, it was a relatively easy task to bring the two together. I once again used polyurethane adhesive, and added wedges to the more traditional through tenons.

Glazing notes

The double glazing units I fitted are 4-20-4 - 4mm glass, a 20mm air gap and more 4mm glass. The glass was toughened and coated for low emissivity.

The units were internally glazed and sealed in place after the frame was fitted with a low-modulus silicone mastic.

Making the door

The door is made in two sections; these have a similar construction but there are some notable differences. The internal frame has two 6mm plywood panels fitted to give the door its rigidity, to prevent it sagging and to make the door airtight. The outside frame has a two-part exposed (shortened) middle rail which allows a rain-resistant joint around the letter box, whereas the inner rail is thinner to allow the internal vertical boards to run the length of the door. Similarly both the bottom rails are thinner to allow the vertical boards to run over them.

I thought it would be more interesting (and practical) to show this sequence of operations step by step, starting with photo 12, rather than to write up a text with annotated photographs. So please follow the sequence through to photo 20...

NEXT MONTH

This process gave me two identical external frames. From now on they would be treated completely differently, so I put them to one side and concentrated on making the internal frame. See the February issue for full details.



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Bottoms up!

There are some clever bottle stands on the market that can make great Christmas gifts. If you search the internet you'll find all sorts out there. I thought you might like to see what you can do with wood



This is a block of chestnut I'm using for all three stands. I've made a template for marking out the crescent moon one

f the three designs I've chosen, the cantilever one is fairly common in various guises; the convex one I've not seen before, and the crescent moon one is probably the most fun to make and use!

These all came out of an end chunk of 75mm thick chestnut I had left over from a previous job. Anything similar will do though; it just depends on how fussy you are with your finish. I've made the crescent moon one up from jointed pieces in the past. See if you can make one work!

1: THE CANTILEVER STAND



1 Slice a strip of wood about 18mm thick off the edge of your workpiece



planed square, you can drill the neck hole



3 Make the hole about 30mm in diameter, drilling into scrap wood to prevent breakout



4 Use a protractor to mark the end angle of about 60° on a scrap piece of mdf



5 Use the mdf as an angle guide on your table saw to cut the end of the stand to 60°

This is the basic version, made for one bottle only. You can play around with multi-bottle versions, up to half a dozen bottles tall and two or more bottles wide. You pays your money and takes your choice! Here we're going to sort out a single one.

You need a piece of wood planed all round and squared up to finish about 380mm long, 80mm or so wide and 18mm thick. Anything will do; pick something that's either easy to work or very decorative.

wood. Any breakout on the far side can then be cleaned up when the piece is planed to its finished thickness.

from the good face into a bit of scrap

The right angle

The angle cut at the bottom end of the piece is 60°. A degree or two either way won't matter too much; the balance will come by varying the length of the neck that's put through the hole. The cut needs to be flat and truly square across the width of the holder. An angled cut will tend to make the bottle cant to one side and then the whole thing could tilt and fall over.

Finish off by rounding the top of the piece or, if you fancy, make this end look like a bottle in shape. All the surfaces then need to be cleaned up, sealed and then waxed to a finish.

Once you're done, put your bottle in and play around until you get the cantilever angles right and the whole lot is stable and able to stand alone.

First steps

Start by planing one face and the two edges parallel and square. Leave the thicknessing for the moment. Some advocate a 38mm diameter hole for the neck of the bottle, but if you check it out this is too big. Most wine bottle tops are around 30mm in diameter, with a few variations of a millimetre or two. So in my opinion a good size to go for is 35mm or slightly less.

Once you've marked the centre point for the hole, drill straight through, vertically,

Anale 60° All measurements in millimetres

75

35Ø hole straight through

80

350

2: THE CURVED STAND

This is the easiest of the three to make; there's not a lot that can go wrong with it! Plane a piece of wood to the finished size you want, then cut the curve on it. Aim for a long base – say 280mm long and about 90mm high. This way the whole thing shouldn't topple over with only one bottle in an end hole. If you want to fit more than three bottles, go wider but not taller.

Drilling the holes

Set your Forstner drill bit up in a pillar drill if you have one. If not, work by eye trying to keep the holes central and in line with the length of the piece. Drill out the middle hole first to a depth of about 38mm. The end



1 The convex shape of the stand can be marked out from whatever is to hand



hole centres need to be positioned 65mm from the centre of the middle one to allow clearance on the shoulders of the bottles when they're in place. The centres of the end holes need to follow the radius of the curve so that the three bottles are evenly spaced and in line with the centre point.

Finishing off

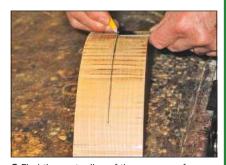
Once you've drilled the three holes, clean up all the surfaces. If you've left enough on the curved face, any break-out can be



2 Cut out the rough shape of the convex curve on the bandsaw, or with a hand-held jigsaw

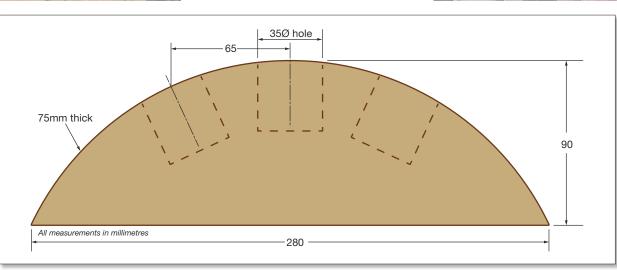
4 Drill out the centre hole first. Then make a jig to angle the block so you can drill the other two at an angle to the first one

5 Use a disc sander if you have one to clean up the curve and remove any drilling break-out planed, trimmed with a spokeshave, or simply sanded away. Then seal and wax the piece. I've glued a strip of baize on the bottom of mine to finish it off.



3 Find the centre line of the convex surface and mark the positions of the three holes







3: THE CRESCENT MOON STAND



1 Cut the first shapes from the block. Save the offcuts for turning into bowls

2 Cut out the crescent shapes. The edge block

This is the fun one! Make a pattern so you can lay it on your wood and pick the best places from which to cut the blank. A stiff piece of card or thin ply will be ideal. Mark out the two arcs. Once more this isn't a precise science. The outer one needs to be around 280mm in diameter and the inner one somewhat less. The objective is to create a slim, stylish shape, not a chunky one. With the pattern in hand you can then cut directly from a piece that has been planed to thickness on both sides.



3 Mark the centre of the line across the crescent where the bottle neck hole will go

Drilling the hole

When cutting the outer curve, leave a bit more meat on the back side where the hole will exit. This gives you more stuff to take off after the hole has been drilled when cleaning up any break-out you might have. The hole needs to be drilled from the inside out and in line with the radius of the outer curve. Don't drop the angle of the hole down because this will make the bottom of the bottle touch the other end of the stand when it's put in place. Drill the hole on a pillar drill or by eye. Its centre should be no more than 100mm down from the top.

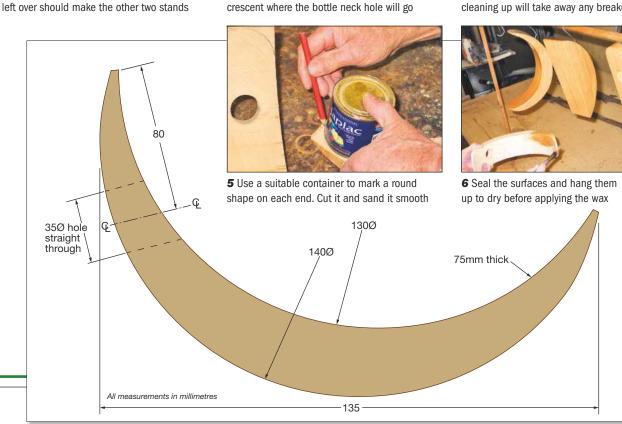
Rock and roll

Disc and bobbin sanders make the job of cleaning up his shape much easier. Once the worst of the clean-up is over, try a bottle in to see how it sits and balances. Put the tip of neck in first and then adjust until you have the right position for it to rock. If you've got it right it should rock back and forth, with a little help, until it settles in a suspended position.

Finish off by rounding the two ends, then seal and wax it to finish off.



4 Drill the hole into some scrap wood. Final cleaning up will take away any breakout





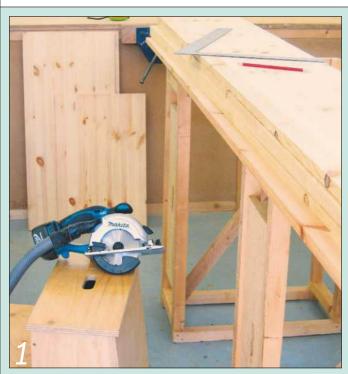
Natty dresser

It's always a treat to get a bit of free-standing furniture to make, especially when the customer doesn't demand mdf. Such was the case with this painted dresser commission, and so it was with a light heart that I skipped off down to my local timber merchant to buy some proper wood

've yet to meet the wealthier type of customer with the six-figure salary, so we were keeping things real with laminated pine boards for the carcass, American poplar for the doors and framing, birch ply drawers and a decorative top of solid oak. We arrived at the design by identifying favourite features observed in a lengthy internet search, all united and proportioned to fit the space available, and made real in two dimensions courtesy of that latest SketchUp CAD programme.

Accuracy matters

With all the dimensions finalised - the dresser was to fit snugly in a fireside alcove - I could make a start on the actual woodwork. After a formal inspection of the timber, I spent more than a few careful minutes marking and cutting out the carcass components, photo 1, paying particular attention to keeping everything nice and square. I've found that it really pays to set a high standard for accuracy



Accurate marking out is essential, right from the start of the project



Dominoes are more suitable than biscuits for joining carcass rails



Here's a spot of very careful freehand biscuiting; if you're on the line it's fine





The Domino jointer benefits from additional support for its fence



A pull saw is sometimes the best option for cutting out notches accurately



The carcass components are all prepared and ready for assembly



right from the beginning; ignoring small mistakes early on invariably leads to larger ones making themselves uncomfortably felt later on in the job.

Biscuit choice

I've long used biscuits for joining the various components of a panel construction, in particular for the base and sides, but lately I've improved things a bit by using a Festool Domino for anything resembling joinery – in this case, the top rails.

This loose tenon technique offers plenty of scope, **photo 2**, both in constructional strength as well as in ease of working, and I can heartily recommend it to all readers. For the biscuits, I'm still using the 'swing' type of biscuit jointer, which I happen to think is superior to the more widely available 'plunge' version, especially in terms of stability, control and accuracy.

Careful marking

I've refined my techniques over the years, and have found that it's possible to biscuit a carcass side accurately pretty much freehand, photo 3. As long as your machine is set up with care and you still have a steady hand, the savings in time and aggravation are considerable. If in doubt, do a trial joint or two first.

The Domino, though similar in principle to the biscuit jointer, requires a spot more discipline, but as long as your markings are consistent - preferably taken from a jig or gauge - the work takes no time at all. Although it's well balanced, the Domino jointer benefits from a good solid surface for its horizontal fence, photo 4; I usually clamp a temporary support onto my workpiece whenever necessary.

Instant carcasses

For extra strength on this unit, I went for an internal divider wall between the three base unit cupboards. This involved a bit of notching out for the horizontal rails, photo 5; when you're doing this, just make sure that each component is clearly marked to avoid notching out the wrong bit. Label things if it helps, photo 6.

Over time I've realised that it really pays to have a dry assembly before reaching for the glue, but despite checking the orientation and fit of every joint, I neglected to appreciate the full awkwardness of this particular glue-up until I'd started. As the frustrating minutes ticked by I found myself revising the assembly plan time and time again, in the end resorting to one or two discreet screw fixings where I couldn't fit sash cramps, so thank heavens for good

old slow-set PVA. The top unit was a breeze by comparison, and it all came good in the end, **photo 7**; maybe I'll remember the lesson for next time...

Framing up

I went for a plant-on frame for this job. Not only will it correct any carcass inaccuracies; it also provides an opportunity for a little more decoration - in this case a mitred scratch bead to frame the doors and drawers, photo 8. All of this work was in the American poplar (or tulipwood as it's sometimes known), a lovely close-grained hardwood. After careful marking out, routing and cutting to length, it was jointed with a mixture of halving joints, Dominos and pinning with 16-gauge brads from my pneumatic nailgun, photos 9-11. When it comes to this sort of job, it's of paramount importance to keep everything square or there'll be a struggle during the next stage.

Coming together

The hardwood frames were then fixed to their softwood carcass counterparts, using a combination of biscuits for the parts that needed to be flush and clamps and good old air nails everywhere else, **photo 12**.

I like to start at the bottom wherever possible, and so I concentrated my next efforts on fitting out the base unit. Drawer bearers ended up coming out of an offcut of some laminated bamboo worktop. Bamboo is an extremely hard-wearing material and ideally suited to the job in hand.

Little boxes

The drawers themselves followed established lines of construction: 12mm birch ply boxes with a fitted front screwed on. The fronts and backs were tongued into grooved housing joints in the sides, photo 13, both parts of which were quick and easy to produce on a carefully set up table saw. If correctly approached this is a nice safe job, but you do really need a sliding table to ensure repeat accuracy; failing that a router will prove to be an adequate stand-in, but there will likely be a bit more fuss with fences, clamps and the like.

Open door policy

Like many a pro woodworker these days I'm loving my Festool Domino, and it was put to good use again on the doors. After a spot of careful machining on my little DeWalt planer thicknesser, it was just a simple case of cutting all the components to length before reaching for my favourite Systainer case – the one containing the Domino jointer. For a job like this, it's now that the



I routed lengths of scratch bead to frame the doors and drawers



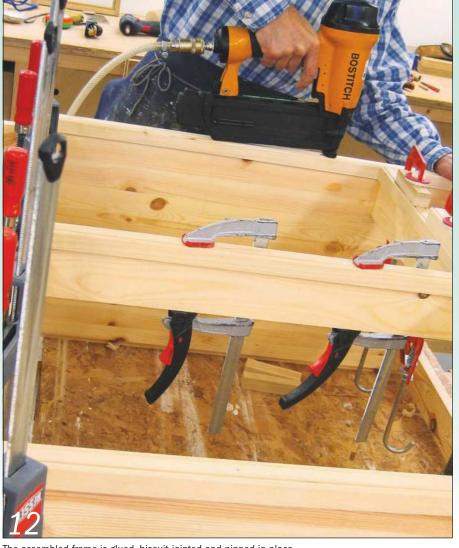
Use a tenon saw and a chisel to prepare the various cross-halving joints



A mitre saw will produce a clean, accurate cut for the frame joints



Dominoes are perfect to use as loose tenons for assembling the frame



The assembled frame is glued, biscuit-jointed and pinned in place

WOODWORK | Painted dresser



The drawers are simple 12mm birch ply boxes with a screw-on front



Cut the door panel mouldings on the table saw; note the push stick



The panel mouldings were simply mitred and pinned into place



A sharp bench plane is a prerequisite for accurate edge jointing



Well-fitting boards don't need biscuits when jointed edge to edge

dividends of accuracy in the frame-making will pay off; with all the doors exactly the same width – and only two different heights involved – it's quick and easy to produce a small batch of identical doors.

Whilst a square-section door has much to recommend itself in terms of simplicity, a spot of moulding definitely adds a bit of interest and so, after running out a quadrant moulding courtesy of my trusty Trend T5, I ripped off the resulting lengths on the table saw, **photo 14** – a job that's both safe and accurate with a sharp blade and the right technique.

The moulding was simply mitred and pinned into place with my latest nailgun, a headless 24 gauge model from the Axminster stable, **photo 15**.

Room at the top

With the doors glued up I felt it was about time to turn my attention to the show-wood top. Two hours at my local timber yard (they love me there) had finally turned up a couple of lengths of quarter-sawn European oak, and I'd part machined it as soon as I'd got it back. The weeks in between had seen no discernible movement, so I gave it the final thicknessing and dimensioning required before sharpening up my longest plane. Coming off the machine planer, the edges were good and square, but each piece needed a bit of correcting before I was happy with the final fit, photo 16. When it comes to edge jointing I like to stand each board on its neighbour to be sure I can't see any light coming though between the planed edges.

Through a combination of luck and skill, the separate lengths looked as if they would join up with little fuss. This being the case, I reached for the glue and cramped them up with no recourse to biscuits at all, **photo 17** – very satisfying. Purists often frown at the mention of a belt sander, but I can't think of a better way of cleaning up a worktop; as long as you avoid dips and gouges, and make sure you work down through the abrasive grades, you'll be fine.

Moving on

Things were moving on well now, and for once I had managed to avoid any really bad mistakes so far, a situation which looked set to continue at this point. The doors were fitted with their hinges, the brass butts being let into the edges courtesy of some delicate routing with my favourite Bosch palm router – the ideal power tool for this type of job – followed by some trimming out with a chisel, **photo 18**. I then hung them to check fit and clearance, **photo 19**, and made the necessary adjustments.

Underneath the arches

I still had one or two challenges ahead of me though, particularly the arched top in the upper unit. I got this out of my spare poplar, and prepared an exact-size jig while the glue went off. I'd left the central section square-edged, so it was pretty easy to fit the arch blank and not too tricky to pin some loose scratch beading to the other three sides of the rectangle, **photo 20**.

I decided to shape the arch blank in situ, mainly because it was easier to fit, glue and cramp it into place, then to jigsaw the curve to shape, **photo 21**, and to rout the edges square using my fresh arch jig and a bearing-guided template cutter, **photo 22**. With a bit of care it all came out pretty well, and the overall effect has proved to be very pleasing to the eye.

Cornice of doom

I struggled a bit trying to get the right curve for the apron under the upper doors; if you're not happy you really have no option other than to junk the first one and do it again. Fortunately it was only 6mm MDF which I was chucking out, so don't anyone be shedding a tear!

Space was an issue with this particular unit, and a secondary session of measurement to check confirmed that things were looking a bit on the tight side, so I gave myself a spot of wriggle room by cutting the plinth to avoid the returns. I've seen other makers come unstuck here when they've not taken the room skirting into account; my problem was looking to be the cornice. Taking the customer at her word, I'd gone for the tightest fit possible, but was now starting to regret my close tolerances. I have a weakness for a separate cornice; although involving more work, it avoids the almost certain damage it will incur during transport, as well as adding a bit of class to the proceedings.

I got it to my own satisfaction after the third try and, like the plinth earlier, I made use of old-style glue blocks applied with Scotch glue to reinforce the vulnerable parts, **photo**23. It's always good to get the glue-pot on, something which adds a bit more traditional interest for visiting customers.

Let there be light

I was nearly there now, but this job had a little bonus feature: lights inside the two glazed upper cabinets. Suitable interior light fittings are easier to source these days, and I was soon able to fit a couple of mini strip lights inside the top. I got a bit carried away here and made plywood blanks to screen them from view while allowing easy access to their



After routing out the hinge recesses, some hand squaring is needed



Pin on the scratch moulding; the arch blank above is clamped in place



Rout the edges square with the arch jig and a bearing-guided cutter



Make plywood blanks to screen the cabinet strip lights from view



a proper clean-up all round



Hang the doors to check fit and clearance, and adjust them as necessary



Mark out the arch curve and cut along the line with a jigsaw



The glue pot gets a rare outing to secure old style glue blocks for reinforcement



Cut the back panel boards to length and test-fit them together



The cornice gets the knotting treatment before being primed



Prime and paint the boards individually to disguise shrinkage once the boards are fitted



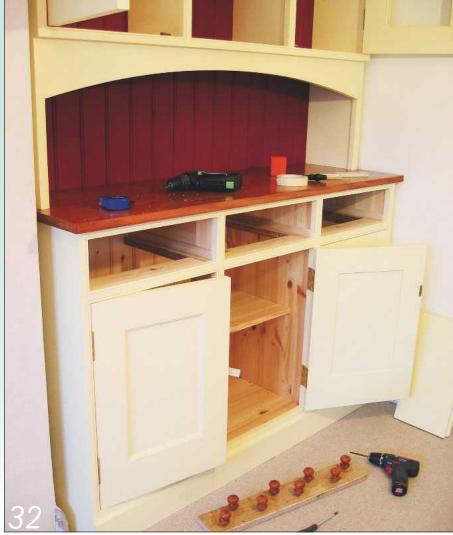
Judicious use of masking tape ensures cleanly painted edges



Make up a simple drilling jig if you plan to fit adjustable shelves



Everything is painted and ready to go on site for final assembly



The fit couldn't have been much closer, especially at cornice level, but it went in smoothly

switches, photo 24, and routed the relevant sides of both units to conceal the flex.

There was one more task to carry out at this stage: to cut and test-fit the lengths of matchboarding for the back of the upper unit. At this stage I simply slotted them together, photo 25, numbered them on the back and took them apart again ready for painting.

Painting and decorating

After a serious clean-up all round, photo 26, and a spot of knotting on the carcass here and there, photo 27, it was time to reach for brushes, rollers, primer and paint. While I quite like a bit of painting, the next couple of days weren't quite in my Top Ten happiest list, although I did feel pretty good when the final coat went on. Note to self: use white knotting in future!

It might seem like extra work for no good reason but, by painting each length of the matchboarding individually, photo 28, I could be sure of avoiding any nasty show-through along the joints when the boards inevitably shrank in their centrally heated surroundings. Thank goodness for acrylic finishes - not always the best option, but certainly the easiest and quickest to use these days. Some judicious use of masking tape ensured good clean edges where it mattered, photo 29.

On the shelf

I pretty much always go for adjustable shelves these days, photo 30. Although it's pretty tedious drilling all those holes – even with my own jig, visible in the picture customers like the flexibility it offers. What's more, the job looks tidier without masses of battens holding up the shelves.

Weighty matters

Working by myself a lot of the time, it becomes second nature to make things in manageable sizes, photo 31; by leaving the dresser as a kit of parts it was pretty straightforward to assemble everything on site, including the matchboarding on the upper unit.

All looked good as the assembly went ahead, and after some nifty pocket cutting with the jigsaw on the carcass side to allow access the plug sockets, it was time to nudge the whole piece into position, photo 32. I genuinely feared for the cornice, convinced that I would have to cut it down to fit, but the furniture gods were kind to me this time, and I squeezed the job in with approximately 2mm to spare at each side. I reckon I'll get the hang of this woodwork lark soon...

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BY ANDY STANDING

The houndstooth dovetail

The dovetail is one of the most instantly recognisable of all the woodworking joints. Not only does it look good; it's also an incredibly strong and efficient construction. Here's a particularly attractive variation on the theme



1 Start by setting your marking gauge to the thickness of the pin member



3 Because this joint uses pins of two different lengths, mark a second gauged line across the tail member about a third narrower than the first



2 Use the gauge to mark this dimension across the end of the tail member



4 Set the tail member vertically in a vice and use a combination square or a ruler to mark a line 6mm in from both edges

he design of the dovetail joint gives it considerable mechanical strength, needing little adhesive to hold it. The joint is also seen as the epitome of the woodworker's art, and a well-proportioned and properly executed joint can add greatly to the overall impression of a piece of work.

There is a variety of dovetail designs, from fairly coarse carcass dovetails through to needle-fine drawer dovetails. Although there are many standard dovetail layouts, it is perfectly acceptable to vary the spacing and regularity of the pins to suit your particular taste, so long as the strength is not compromised.

Here are instructions for making a houndstooth dovetail, which incorporates different pin sizes. It can be made both as a through or lapped joint; I've described making the through variety here.

Before you begin, it's vital that your timber is accurately planed and thicknessed. The width of both components must be identical, but their thicknesses can be different. The ends to be jointed must be perfectly square.



Divide the space between the two marks into three using dividers. Place one point on the first line, walk them across the end, and on the third step the point should land on the second marked line. If it doesn't, re-adjust the spacing and try again



Once you've divided the top into three, use the dividers again to mark each section in half



Now you can mark out the dovetails. Use a sliding bevel set to the correct slope (1:8 for hardwood, 1:6 for softwood). Mark the long and short tails alternately. Remember to mark down from the outer marks as well



Set the tail piece in the vice and angle it so one set of lines is vertical. Use a fine-toothed saw to cut down to the gauged lines. Then loosen the vice, tilt the board in the other direction and repeat the process



Cut across the gauged lines with a coping saw to remove the waste. Clean up the resulting cuts with a narrow chisel



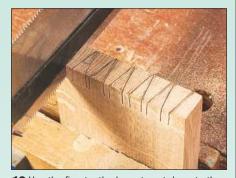
Once the tails are cleaned up, take the pin member and cramp it vertically in the vice. Lay the tail piece in position on top of it and mark the pin positions using a scalpel or a fine-bladed knife



You can if you wish pick out the marked lines with a pencil to make them easier to see



Now mark the thickness of the tail piece on the pin member using the marking gauge



Use the fine-toothed saw to cut down to the gauged line. Be careful to keep to the waste side



Remove the waste wood as before using the coping saw



Clean up the pins with a chisel. Support the rear of the work with a sacrificial board to prevent breakout. Test the fit of the joint and make any necessary adjustments



The joint should be fully assembled only once. Apply a small amount of glue to the mating surfaces and tap the components together with a mallet and a protective block of scrap wood





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Happy memories

This is one of a pair of memory boxes that were commissioned as gifts for my clients' grandchildren. It's pretty straightforward four dovetail joints, a base and a tray. And then there's that curved lid...

he box measures 370 x 280 x 150mm, and my clients wanted the grandchild's name inscribed in the lid. Well, my carving isn't up to charging for, so that task was subcontracted out to carver Mike Painter (www.mikepainter.co.uk) and won't be covered in this article.

Prepping it up

I like to buy my timber in 200 x 100mm slab-sawn boards which I then rip down on the bandsaw to create quarter-sawn boards 100mm wide, thus virtually eliminating cupping. Unfortunately, in this case the size of the box meant that every panel had to be jointed up from two or three boards.

So having got my little pile of 100 x 12mm boards (100 x 27mm for the lid) I gave my Clifton No 7 plane a well-overdue workout before edge-jointing them. I then turned my attention to the lid, so the carver could be cracking on while I made the carcass.

Learning curve

That's hardly an original pun, but it's a very apt one here: this was my first-ever large convex surface. So here's what I did, what I should have done, and what I eventually learnt.

I'm often asked why I don't laminate curved lids, and I'm sure that question will occur to you, too. There are two reasons: I've never done that kind of work, so I prefer



All the panels needed to be edge-jointed - time to give my Clifton No 7 plane an outing



Three cramps, the central one across the top, help keep the glue-up flat



I prepared thin plywood templates for marking the curves on the lid and carcase ends



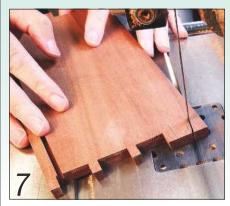
Trying to hollow the lid from scratch with a round-bottomed jack plane was unrealistic...



...but this antique plane with its tight radius really scooped out the waste



I used the lid as a former to shape a sanding block for smoothing the lid



The dovetailed carcase ends were cut to shape on the bandsaw...



...and then smoothed to their final profile using my the disc sander

to stick to what I know; and apart from that I do prefer the look of 'proper' end grain when the lid is open.

An alternative would be to cooper it. That would reduce the waste as well as the effort, but it presents some tricky issues with the cramping up – so I was back to the hand-planing option.

A hard task

I started by hollowing the inside; with the outside still flat it would sit easily on the bench while I worked. I marked the inside profile on each end using a template I'd prepared earlier, leaving a significant flat area near the pivot edge to lower the centre of gravity, both visually and literally, when the lid was open. Then the fun began.

Attempting to hollow it from the flat using a round-bottomed jack plane wasn't very encouraging. It soon became very clear that I'd have a long and sweaty physical workout ahead. Then I remembered some antique round-bottomed planes that I'd bought opportunistically at a fair, put in a cupboard and forgotten. One of those speeded up the job considerably, its smaller and more aggressively-curved blade working a little like a scrub plane and taking very heavy shavings. Then my round-bottomed Philly jack plane finished it off beautifully. Finally, I shaped a sanding block to the profile and sanded down through the grits before sending the lid off to the carver.

Second thoughts

By now I imagine that everyone reading this is bellowing 'Router!' at the page. That would indeed have been a much more efficient way of removing the bulk of the waste, but there were two reasons why I didn't do that. Firstly, I'm really quite averse to the racket routers make, and far prefer (given time and energy) the silence of a hand plane as the bench becomes covered in beautiful shavings. Secondly, I didn't think of it until it was pretty much too late.

Dovetails and grooves

Marking out and cutting the dovetails was a straightforward matter. I do it by hand as it's one of the features the client is paying for, but they could be routed so long as a good jig is used that allows free adjustment of the proportions - equal tails and pins really don't work on a decorative item like this.

The 4mm groove for the base needs to be positioned within the tails so that it can be run straight through on the pin boards to minimise complication, with stopped grooves on the tail boards. Scrap timber stops cramped to the router table easily deal with that. Cut the ply base a shade under-size to allow a bit of wiggle room.

Planning the pivots

Plot the pivot hole positions on the box ends before marking the curved profile. This is then cut slightly shy of the line on the bandsaw. I finished mine off at the disc sander, which simplifies the task but does demand some care as even a fine sanding disc will quickly go down below the line if given its head. The lid pivot holes are best drilled on the drill press to ensure good alignment.

Peace of mind

Generally, I assemble dovetails without a trial fit, as every assembly and disassembly loosens the joint. But with all the edgejointing and profiling involved, I'd invested a lot of time in this carcass already and really needed the reassurance of a partial trial fit. I therefore allowed my blood pressure the concession of assembling each joint halfway to assure myself all was well before gluing up the carcass and leaving it to dry. I also gave the interior surfaces a good sanding before assembly while they were accessible, and cleaned up all the joints afterwards with a plane.

Inside story

The design includes a lift-out tray supported on 4mm mitred hardwood linings that also serve to cover the raw edges of the suede base lining. I cut the linings minutely overlength, then sanded and varnished them before mitring them. If the mitres are cut earlier it's very difficult not to round over the ends of the pieces when sanding between coats of varnish. So I leave the ends square at this stage, and mitre them when they're actually being fitted to guarantee crisp internal corners.

The lid returns

With the lid back from the carver, I trimmed it to fit perfectly between the sides of the carcass, leaving a small overhang at the back which I planed down by trial and error to form a stop. Then, with the lid cramped in place, I drilled the pivot holes using the holes in the carcass as a guide.

Then I turned my attention to curving the top surface. Well, that's not strictly accurate - my attention had been on that for most of the time it was away! After my struggle with the inside radius, I knew I was going to rough out the waste at the router table, using a straight cutter and working from each side alternately.

Plane sailing

Having roughed out as close to the line as I felt confident to go (remembering I'd just paid a carver to inscribe the inside, I didn't feel inclined to push my luck), I turned to a



The pivot holes were bored on the drill press to ensure they were truly perpendicular



After glue-up and assembly, the box was left on a flat surface to dry...



When the lid returned from the carver, I scribed its outside curve from the carcass end



With most of the waste removed, my jack plane smoothed the final curve



I tried a half-way test fit next. Never push dovetails fully home as this spoils the joint



...before being cleaned up and the dovetails flushed down with a sharp plane



I removed most of the waste at the router table using its fine-adjustment system



A scalpel, straightedge and cutting mat are essential for doing the suede interior



Before lining the tray, I stuck a looped length of ribbon to the base to provide a finger grip



I mitred all the ends of the box linings using my birdhouse jig and a shooting board

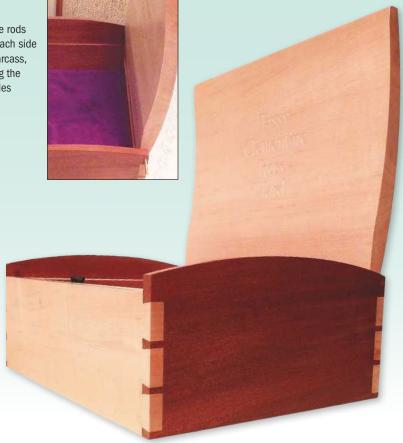


Repeatedly trimming and testing the mitres results in a close push fit



The brass rod for the pivots may need to be filed down in diameter for an easy sliding fit

Insert the rods fully in each side of the carcass, then plug the entry holes



tool with which I'm much more familiar and confident - my trusty jack plane.

The technique here is to start by planing flats at progressive angles, removing the ridges left by the router and forming tangents to the line, and then to plane away the ridges which of course forms more flats, more tangents and more ridges. Continue this process for a while and the flats and ridges become tinier and can be sanded away.

Varnish time

Before finally attaching the lid, I did the varnishing. This is mainly to ensure that the tricky areas around the back and the pivots, inaccessible after assembly, are well covered. However, I usually do all the varnishing at this stage except the outsides of the box ends, which are left until the lid is on and the pivot holes plugged.

My preferred finish, as boxes tend to get an awful lot of handling, is a matt acrylic varnish. This provides good protection while retaining as far as practicable the natural colour and texture of the timber.

It was now time to fit out the interior.

Internal affairs

First, I began by preparing the tray. A piece of black ribbon, looped back at the end, forms a handle, and I set it at the front as the tray actually needs to be lifted front first to clear the back of the lid as it is removed. I first glued the ribbon to the tray base using Copydex adhesive - and then with the ribbon in place, thoroughly brushed on a further layer of the same so the adhesive soaked right through for a good bond.

Next, I mitred the ends of the linings to a push fit using my birdhouse jig and a shooting board. The front lining may well need to be relieved very slightly on its lower edge where it passes over the ribbon, and this can be done with a small sanding drum.

Finally, I cut pieces of card a whisker under-size to fit the base of the box and the tray, and attached the suede with doublesided tape. Then, after a quick brush-up, the suede and the hardwood linings went in and the interior was transformed.

On with the lid

With those in place, the lid could finally be attached. I cut off two pieces of brass rod to the right length to leave room for a little 4mm plug cut from scrap sapele. This was glued in after the rods and left a tad proud to be trimmed flush afterwards. The box ends were then given their varnish finish.

After that, there was just one task remaining - but it's one to which I accord a high degree of importance: to stand back and admire the finished object!

More than just a book . . .

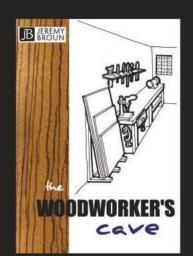
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This sturdy push-along tractor will give the energetic toddler in your family plenty of exercise... and lots of fun! It's even got a luggage compartment

Shaping the chassis

Cut out a rectangle behind the seat. As shown in the photograph a simple way to do this is to drill four large holes and then cut out the area with a scrollsaw, photos 1 and 2. It's then much easier to drill the hole for the back wheel axle. It's difficult to drill an accurate hole across a wide board; apart from the need to have a suitably long bit there's always the chance that the drill will wander off with the grain. Sand and round off all edges; there must be no risk of splinters, photo 3.

Mark out carefully on each side to ensure accurate alignment and then drill 10mm holes for the axle, photo 4. These holes don't have bushes because later the axle rod is glued into the chassis and doesn't rotate.

Adding the seat

Cut and shape the seat, seat support front and seat support back, then round off the edges and sand them smooth, photo 5.

Drill two 6mm diameter holes to a depth of 15mm in the top edge of each seat support to take a dowel. Glue and screw the seat supports into place from the underside of the chassis.

Use dowel points to find the position to drill four 15mm deep holes on the underside of the seat, **photo 6**. Glue the dowels in and cramp it up, photo 7.

Making the engine block

Cut out the engine block and smooth it to shape with a plane and sander, photo 8. Mark the positions on the underside for two screws. Mark the position for the steering axle rod and drill a 12mm hole right through the block, photo 9.

Put the block in position and mark the two places to drill 4mm diameter holes in the chassis. Temporarily screw the engine block in position and mark the exact spot where the 12mm diameter hole for the steering rod is to be drilled in the chassis; remove the engine block and drill the hole.

Paint the engine block at this stage and then screw it permanently to the chassis. Cut a length of 12mm tube and insert it down through the hole in the block and chassis. Fix it with Araldite to hold it securely.

Make a tray or boot to go behind the seat to cover the area cut out over the back axle.

Cutting the wheel blanks

Mark out the wheel blanks using compasses and a pencil and clearly indent the centre point. Cut out the circles on the outside of the line using a bandsaw or jigsaw. I was able to

his ride-on tractor is designed for the 2-4 year old to scoot along on. It isn't difficult to make and is designed to be robust and stable; it's better suited to indoor use. Originally I was going to use proprietary plastic and rubber wheels, but I was unable to find the size I wanted and even the smaller wheels were so expensive that it made the whole project quite costly, so I opted to turn the wheels in ash - this is a woodworking project after all! Well-seasoned ash or beech are particularly suitable for this project because, as well as being strong, they can be sanded to a smooth finish.



Mark the rectangular cut-out in the chassis behind the seat and drill a hole in each corner



Cut out the waste using a scrollsaw if you have one. Use a jigsaw or coping saw otherwise



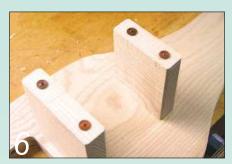
Sand and round off all the edges of the chassis using a drum sander



Drill a 10mm diameter hole for the axle through each edge of the chassis into the cut-out



Cut out and shape the seat and the two seat supports, then round off the edges and corners



Drill dowel holes in the ends of each seat support. Use dowel pins to mark the seat



Glue the dowels into the holes in the seat supports and fit them to the seat and chassis



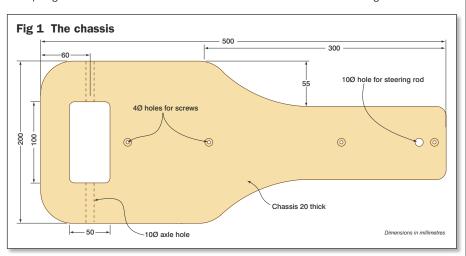
Cut the engine block to size, chamfer the top edges and sand it smooth



Mark the position of the steering rod on t he block and drill a hole through it

cut the four blanks from a plank measuring 1000 x 260mm which I thicknessed down to 30mm. I used a powered jigsaw rather than a bandsaw, photo 10. This is a relatively cheap, useful tool, usually associated with DIY tasks, which is ideal for cutting round and irregular shapes. Most machines have an extraction point so that they can be connected to a dust extractor, and there's a bewildering number of blades for every possible need. The wood needs to be held firmly to the bench with a cramp and positioned so that there's sufficient clearance over the edge; a Workmate-type bench is ideal. Keep your fingers well away from the underside because the blade is out of sight and unprotected.

Drill a pilot hole in each blank to suit the screw chuck you're going to use. I used the Peter Child screw chuck, which has an excellent parallel-core screw and requires a 6.5mm pilot hole. The screw cuts a crisp thread in the wood itself, and it's possible to remount the work with confidence if this is necessary. The main advantage of this screw chuck is that the screw is inserted through the rear of the body using an 8mm hex key; the engineering ensures accurate rotation and a very strong grip, **photo 11**.



Turning the wheels

Turn the large wheels first. Set the lathe speed to 1000rpm, turn the blank to a diameter of 220mm and round the edges.

Turn a recess to suit the expanding jaws of the chuck you plan to use. I used the Oneway chuck with its standard jaws which expand into a 55mm diameter recess 5mm deep, **photo 12**.

Remove the screw chuck and the blank from the lathe and repeat the process for the

second large wheel. Then tackle the smaller wheels, turning them to a diameter of 140mm. Replace the screw chuck with the scroll chuck and mount the first large blank, expanding the jaws into the turned recess.

One advantage in using the chuck in the expansion mode is that the groove in the back of the wheel enables the work to be remounted later if necessary.

Turn a recess 5mm deep and 70mm wide, starting it 20mm in from the outer

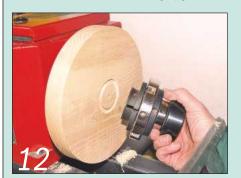
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Draw out the wheel blanks, cramp them to your workbench and cut them out using a jigsaw



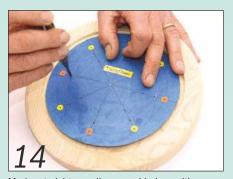
Mount each wheel blank in turn on a screw chuck. I used the Peter Child chuck shown here



True up the first blank, then create a recess to suit the expanding jaws of your chuck



Mount the blank and turn a 5mm deep recess starting 20mm in from the wheel rim



Mark out eight equally-spaced hole positions on the wheel. Drill the holes with a Forstner bit



Cut four lengths of 25mm diameter steel tube to make bushes to fit into the wheels

edge of the wheel, photo 13. Repeat for the smaller wheels with measurements 5mm deep and 30mm wide, again 20mm in from the outer edge. Sand all the finished wheels to a fine finish.

Fit a drill chuck and 12mm drill bit in the tailstock, remount each wheel in turn and bore a 12mm diameter hole through the centre to take the bushes.

Wheel details

Mark out eight equally-spaced positions on the large wheels, **photo 14**. Fit a saw-tooth Forstner bit in a pillar drill to make the holes. Place a piece of mdf between the table and the underside of the wheel. Adjust the depth stop so that only the point of the drill comes through and drill the eight holes. Turn the wheel over, line up the hole left by the drill point and drill again. Each disc will drop out, leaving a clean hole without any tear-out. The bit diameter you choose for the job will depend on the drill sizes you have available, but somewhere between 25 to 32mm will be fine.

Cut out four circles of 6mm ply with a diameter of 55mm to match the rebate in the back of the wheels, and drill a 12mm diameter centre hole in each one.

Cut four lengths of 12mm metal tube to make bushes to fit into the wheels, photo 15. You're looking for a running fit for the 10mm axle rod. The bushes should remove any danger of the wheels seizing up on the axle. Glue the bushes into the holes with Araldite, photo 16.

Glue in the plywood discs; note that they should be slightly proud to act as spacers.

Fig 2 The seat and engine					
90	Seat support front 20mm thick	90	Seat 2	t support back 20mm thick	
		200		_	
90		Seat 20mm thick	(110
80	Engine 55mm		45	12Ø hole	*
-		50 ———		Dimensions	s in millimetres

All dimensions are in millimetres				
Part	Qty	L	W	T
Large wheel	2	240 dia		30
Small wheel	2	150 dia		30
Plywood spacer	4	55 dia		6
Chassis	1	500	200	20
Seat	1	200	110	20
Seat support back	1	90	90	20
Seat support front	1	90	70	20
Engine block	1	150	80	55
Steering wheel	1	150 dia		30
Steering column	1	70	40	40
Axle fork blank	1	200	50	20
Axle fork side	2	60	50	20
Boot tray and steering wheel cap	Offcuts			

washers; six 4mm brass screws; six 30mm lengths of 6mm dowels;

Araldite or other epoxy resin adhesive

The steering wheel and column

Cut a 150mm diameter blank for the steering wheel and drill a hole in the centre 32mm in diameter and 4mm deep. Expand the jaws of a chuck fitted with spigot jaws into the hole and turn the blank to round. Shape the outer rim and cut a recess 18mm wide and 4mm deep, leaving a 55mm diameter hub in the centre.

Fit a 32mm diameter bit in a drill chuck held in the tailstock and drill 4mm deep. Reverse the partly-turned wheel and expand the jaws into the hole. Turn off the back to give a 15mm recess.

With a drill chuck in the tailstock, drill a 10mm hole right through the centre. Then remove it from the lathe, mark out the four spokes and cut out the segments, **photo** 17. Smooth and round off all the edges.

Hold the blank for the steering column between centres and turn it to round. Form a spigot at one end 32mm in diameter and 4mm long to fit into the underside of the steering wheel.

Put the scroll chuck back on the lathe and use the spigot to hold the column in the jaws; with the drill chuck in the tailstock, drill a 10mm hole right through the centre. Note that this is a 10mm hole because the steering rod will be fixed and won't rotate in the column. At the same position, drill a hole 20mm diameter and 9mm deep to suit an ordinary M10 nut, and Araldite the nut into the hole. Turn a small cap to cover the centre recess in the steering wheel; this will be the final part to glue in when the toy has been assembled.

The steering fork

Cut out the three pieces which make up the steering fork and cut lap joints as shown, **photo 19**.

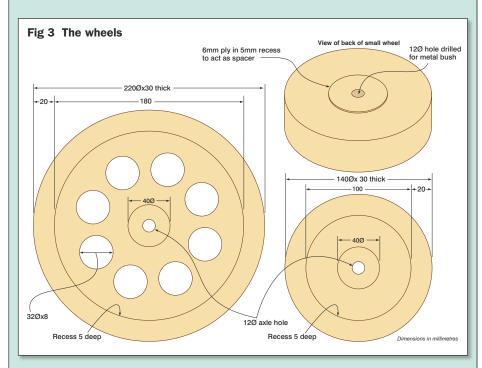
Drill three 10mm holes for the axle and steering rod, noting that they're offset so that the metal parts won't clash. Drill a 20mm diameter 9mm deep hole in the top surface of the fork cross piece to receive an ordinary M10 nut, and Araldite it in position, **photo 20**.

Glue and cramp up the three pieces and then insert a wooden dowel through each joint to provide extra strength.

Assembly time

Paint any parts before assembly. Treat all bare wood with several coats of exterior varnish or finishing oil.

Place the back wheels in position and cut a length of studding with a hacksaw to the correct length, allowing for the washers and locknuts. Thread the rod through the chassis with a washer on each side, push





Drill a 12mm diamater hole in each wheel centre and glue the bushes in with Araldite





Turn the steering column to round, form a spigot on one end and drill a 10mm hole through it



Cut out the three pieces that form the steering fork and cut half-lap joints to connect them



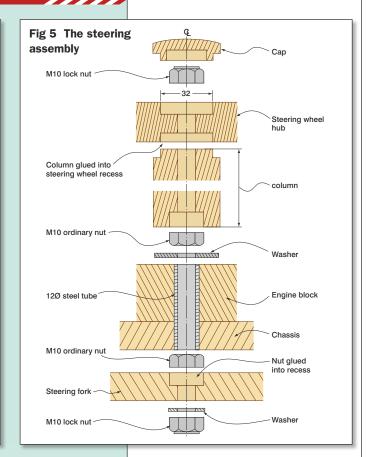
Assemble the fork with a dowel through each joint. Then drill a hole and glue in an M10 nut



Thread the rear axle through the chassis, fit the wheels and secure them with locknuts

WOODWORK | Ride-on tractor

Fig 4 The steering mechanism 20Ø x 9 deep recess drilled for M10 nut 20 60 Note: 10Ø holes are offest so that nut and rod don't collide 50 -32Ø x 4 spigot Cap to fit 32Ø x 4 recess 10Ø 10Ø hole recess drilled - 40Øfor M10 nut 150Ø





Fit the front axle and wheels to the fork assembly and glue the steering rod into the M10 nut



Pass the steering rod up through the tube in the engine block and fit a washer on top



Add a temporary card spacer, fit the steering column and screw it down to the washer



Apply glue to the column spigot, position the steering wheel and tighten its glued locknut



Glue the steering wheel cap in place over the locknut and fix the boot tray behind the seat



on the wheels, add another washer and then secure them with a locknut once you're satisfied that the wheels rotate smoothly, **photo 21**. Carry out the same process to lock the front wheels and axle into the steering fork.

Temporarily position the front forks, steering column and wheel to determine the length of studding for the steering mechanism. Screw the rod down through the nut in the fork, Aralditing the hole liberally so that the rod won't move when the locknut is secured on the underside, **photo 22**.

Allow it to dry and then pass the rod up through the tube in the engine block, **photo 23**. Place a washer over the rod, together with a thin piece of card to act as a temporary spacer, and screw the column down to the washer; check that it isn't too tight and that it can rotate freely, **photo 24**.

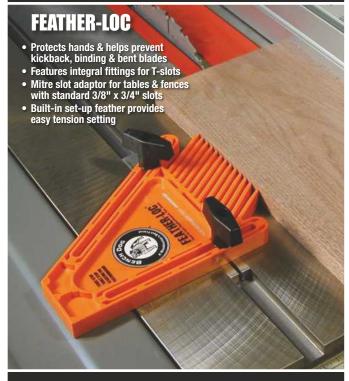
Apply Araldite to the top spigot edge of the column and position the steering wheel, making sure that the spokes are correctly aligned.

Apply Araldite to the inside of the locknut and tighten it down, **photo 25**. The steering wheel and column are now one piece; when the steering wheel is rotated the rod will rotate in the engine block and activate the steering fork and front wheels.

Finally glue the cap over the top nut, **photo 26**, and screw the boot tray in position behind the seat.



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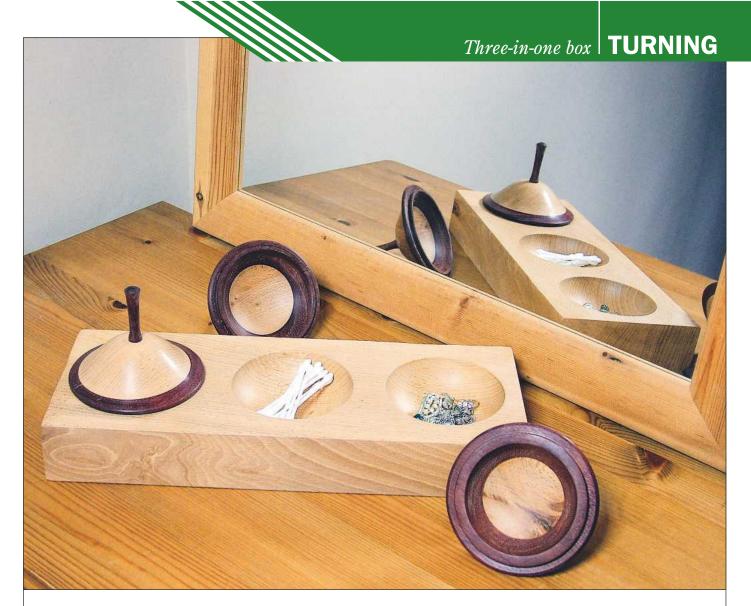
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BY COLIN SIMPSON

Triple whammy!

This project is unusual in that it involves two very different techniques – turning on three centres, and turning a composite block. It produces an unusual and very attractive piece

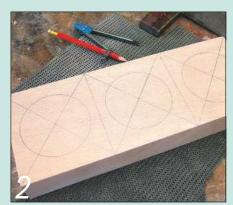
or some time now I've wanted to make a receptacle for holding sea salt and pepper and spices for seasoning fish and meat before cooking. I've put up with small ceramic dishes, but because these don't have lids the contents of the dishes can soon become contaminated. That's why I came up with this project,

but it can just as easily be used at a dressing table to house small items of jewellery, hair clips and the like, or in the office as a desk tidy. You could even play 'hunt the thimble' with your kids!

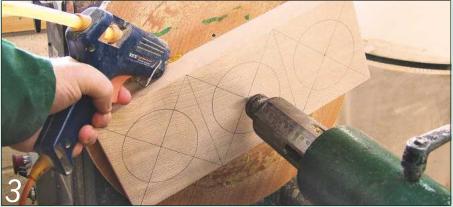
I made the lids from two contrasting woods, beech and purpleheart, but if you wish you can make them from a single piece.



Glue and cramp up blocks of the two contrasting woods for the lids



The layout for the three bowls on the beech block should look like this



Centre the block on a large mdf faceplate and glue it in position

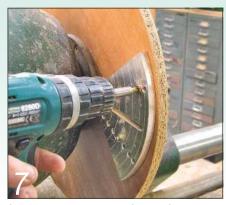




Use the tailstock centre to align the second bowl and glue it in place



Clean up the interior if necessary using a round-nosed scraper



Screw weights to the back of the mdf faceplate to balance the piece



A sticky start

Begin by cutting the wood for the lids. You'll need three pieces of beech approximately 115mm square and three pieces of a contrasting wood of similar size. True up one surface of all these pieces - I used a disc sander – and glue and cramp them together, photo 1. Set them aside for the glue to cure and start work on the base.

Preparing the base

The base is a piece of beech measuring 345 x 140 x 50mm. It's much easier to true this up now rather than later, and a planer/ thicknesser is the ideal machine to do this. Once all six sides are true, divide the top into three rectangles, each 115mm wide. Find the centre of each of these rectangles and use a pair of compasses to draw a circle 90mm in diameter at each centre. When complete, the marking out should look like this, photo 2.

Screw a large disc of mdf or laminatefaced chipboard to a faceplate and mount this on the lathe. Hold the rectangular base against the disc and use the tailstock centre to locate the centre of the middle circle. Then use hot-melt glue to stick the rectangle to the disc, photo 3.

When the glue has cooled, check that the rectangle is held securely, remove the tailstock and bring up the toolrest. Rotate the whole piece by hand to make sure it's not obstructed, reduce the lathe speed to about 500rpm and switch on.

The first cut

Use a bowl gouge to hollow out the first bowl, photo 4, and clean up if necessary with a round-nosed scraper, photo 5. Then sand the inside of the bowl. It's important to finish this part before moving on.

Break the hot melt glue joint and move the rectangular base on the mdf faceplate



so that the centre of one of the outer bowls is now centred on the tailstock's revolving centre, **photo 6**. Glue the base to the faceplate again with hot melt glue.

This time the block and faceplate are going to be considerably out of balance, and even on my very heavy VB36 lathe there was likely to be some vibration. The solution is to screw weights to the back of the faceplate, **photo 7**, to bring the work into balance.

Second helpings

Lower the speed of the lathe if necessary and cut the second bowl in exactly the same way as the first. I used my profile gauge to check that the two bowls were the same shape, **photo 8**. If you don't have one, cut a template from stiff card and use this instead. Sand the second bowl, then repeat steps 6 to 8 to create the third bowl, **photo 9**.

Remove the base from the lathe, clean off any hot melt glue and give the whole piece a thorough sanding with a random orbital sander. I then finished my piece with a mixture of beeswax and liquid paraffin.

Getting a grip

When the glue-up for the lids is dry, remove the cramps, draw a 110mm diameter circle on each blank and cut them all out on the bandsaw, **photo 10**.

Photo 11 shows a method of holding work on the lathe that I often use; it works particularly well for small pieces like these. I hold the blank against the open jaws of my chuck and bring the tailstock centre up to hold the workpiece in place. It's a friction hold, and I only use it in order to turn a proper chucking spigot, photo 12. If you use this method, remember to take very light cuts. You could, of course, hold the workpiece in a more conventional way, like a screw chuck.



Use a profile gauge or a shaped cardboard template to check the bowl profile



Cut the three laminated lid blocks to a circular shape on the bandsaw



Reposition the beech block and repeat the process for the third bowl



Use tailstock pressure to hold the blank against the open chuck jaws...



...while you turn a chucking spigot on it. Take only very light cuts



Use a skew chisel to cut a tenon that will be a tight fit inside the bowls



Next, start to hollow out the interior of the lid using a bowl gouge



Make a jam chuck from a piece of scrap mdf to hold the lid by its tenon...



Mount the lid on the jam chuck and shape the outside as you wish



Drill a hole 8mm in diameter in the centre of each lid to take the handle



Use a spindle gouge to turn the handles to shape, then finish and fit them

Inside out

Make the chucking spigot on the lid and mount this in the chuck. True up the base and side of the lid and then mark and cut a small tenon that will fit inside one of the bowls in the base, photo 13. My tenon was 90mm in diameter. Next, hollow out the interior of the lid using a bowl gouge, photo 14. Sand and polish the inside of the lid.

Outside in

Next, make a jam chuck. Mount a scrap of mdf on a faceplate and turn a recess in it 90mm in diameter to fit the tenon on your lid, photo 15. This has to be a good interference fit. I also drill a hole right through the mdf so I can knock the lid off the jam chuck if the fit is slightly too tight.

Mount the lid on the jam chuck and shape the outside. This can be any shape you like, but I opted for a gentle ogee curve, photo 16. Sand and polish the outside of the lid, then drill a hole 8mm in diameter in the centre to take the handle, photo 17.

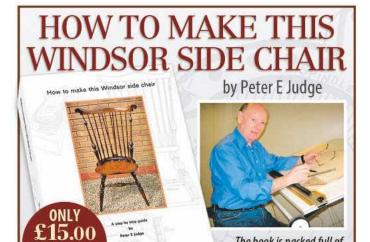


Repeat the lid-making process for the other two lids. Finally, use a spindle gouge to turn the three handles from the same contrasting wood, photo 18. Sand and polish them and glue their spigots into the holes in the lids.

I'm very pleased with the result, but the lady of the house has said that it's far too good to use for condiments in the kitchen and has commandeered it for her dressing table! Ho hum...

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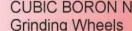


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Power Carving has in recent years rocketed in popularity.

It is true that in these so-called austere times, a skill and hobby like this is a very cost effective skill or hobby!

More and more manufacturers are seizing this opportunity and are developing a whole range of new tools for the carving enthusiast.

Kaizen Bonsai which as it name suggest is actually a company specialising in Bonsai, but in recent years they have arguably become a market - leader with their comprehensive range of carving tools.

Having spent over twenty years using carving tools to create Bonsai, Graham Potter the owner of Kaizen Bonsai then spent two years researching and developing his own tools after experiences with other tools which were just ok, reasonable or even dangerous!

His idea was to make a tool that was versatile for working both large and small projects. The cut rate needed to be exceptional but

with a very long cutting tip life and above all the tool needed to be safe.



Their Terrier™ and Little Terrier™ ranges are receiving much acclaim the

world over being CNC machined from 3032 high carbon stainless steel from a solid Billet with

tips which are replaceable. They are created from polished Tungsten carbide which allows a much faster cutting rate, a shortened loading time and an enhanced lifetime of the tools themselves (which are not to be confused with cheaper less effective imitations that are made in parts).

Behind the cutting edge of both the Terrier™ and Little Terrier™ is a groove which serves to present it at a positive rake to the project making it a faster and cleaner cut. Conveniently, once the cutting face becomes dull, you simply loosen the retaining screw and rotate the tip to a sharper new section. It is reckoned by the manufacturer that the tip should last for a continuous 20 hour drilling session, so these pieces really are at the cutting edge!

The 27g Terrier™ is the larger of the two Overall with a length of just 65mm and designed with a 1/4"(6.35mm) shaft. This allows use in an array of die grinders and flexible shaft machines. It really does remove wood effortlessly and cleanly and its 25mm head removes wood efficciently at higher speeds A chip limiter prevents the tool from 'digging in' to the work.

Unlike some larger tools the **Terrier**[™] has a responsive cutting action that is very pressure sensitive. A light action by the user produces a fast delicate cut but with a little more pressure the tool bites harder without fear of it 'grabbing' or kicking back like some other tools.

For more confined areas the 15mm Little Terrier™ which weighs just 23g just seems to get in anywhere with much greater control and is a solid and robust as its brother and delivers an equally clean job. It's not difficult to see why this tenacious, robust piece of kit which works well at both high and low speeds gets its name!

Both cutters work well at most speeds but the manufacturers recommend best results are achieved at between 1500 & 2000 rpm.

Economically priced at just £45.95 inc VAT and p&p, the Little Terrier™ is a great little investment which should, when

used correctly last a good few years and its big brother the Terrier™ at just £55.95 inc VAT and p&p represents equally good value.

Replacement cutting tips and screws are available separately.

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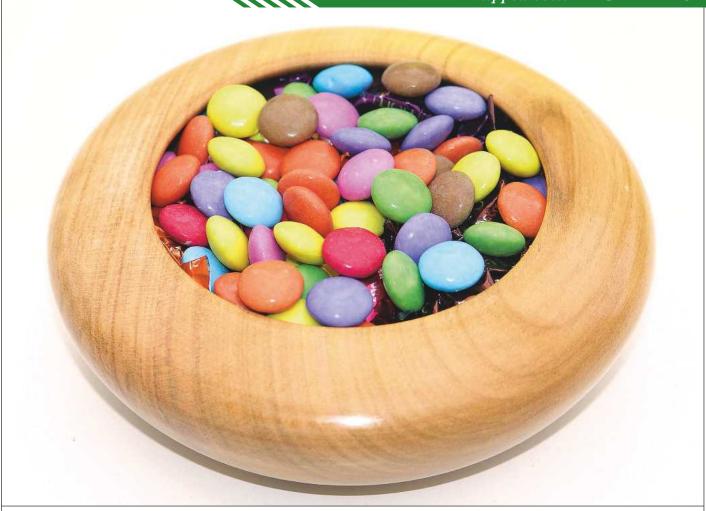
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BY IAN WILKIE

Stiff upper lip

When you ask newcomers to woodturning what they would like to make, they almost invariably say a bowl. In this article I'm going to make a bowl in cherry with an undercut lip, using just one magic tool - see overleaf

he bowl featured here is turned in cherry. When selecting fruitwood it's quite difficult to find a well-seasoned blank that doesn't have faults and cracks. I came across this one at Isca Woodcrafts in Newport (www.iscawoodcrafts.co.uk). Here I found a good stock of home-grown timbers both in boards and turning blanks, and the proprietor was very helpful and knowledgeable.

Preparing the blank

Mount the blank on a screw chuck and face it off with the curved section of the tear-drop scraper cutter, photo 1. Hold the tool with the flat side of the shank resting on the toolrest and with the handle slightly raised.

Next, mark out the recess for the chuck jaws to be used in expansion, change the cutter and use the square-ended blade to form the recess, photo 2.

Shaping the exterior

Fit the scraper blade and start to shape the outside of the bowl, moving the blade backwards and forwards from the recess to the outer rim, photo 3. You'll notice that I've removed the tailstock assembly completely because this gives me better access to the work and greater manoeuvrability.

Continue to form a rounded bun-shape. Turn the cutter over and set it so that the

TURNING | A lipped bowl



Face off the blank with the flat side of the shank resting on the toolrest



Switch to the square-ended cutter to form a recess for your chuck jaws



Return to the scraper blade and start shaping the outside of the bowl



Turn the cutter over and set it so the straight edge does the cutting

straight edge does the cutting. Now the curved edge of the shank will be held down on the toolrest, **photo 4**. By tilting the tool slightly, a shear cut is made to produce a smooth finish.

The purest turner will say that you can't achieve a fine surface with a scraper, and undoubtedly a bowl gouge will give a superior result if used correctly. However, it takes time and experience to get to this standard; if you're just starting out and don't have much time to carry out your hobby, I think you'll be quite satisfied with the scraper.

Sanding smooth

The partly turned bowl now needs to be really well sanded. Move the toolrest out of the way and sand it vigorously, starting with 120 grit and working through to 400 grit. Keep the abrasive moving; use extraction if possible and wear a mask. If the lathe speed is too high, the wood will overheat and little cracks will appear which are almost impossible to get rid of. I hold the end of the extractor hose under the work as I sand to take away as much of the fine dust as I can at source, **photo 5**.

THE MAGIC TOOL

The tool in question is the **Robert Sorby multi-tip hollowing tool**, which retails at £66. It's 480mm long and consists of a round steel shaft with a flat on one side, fitted into a well-shaped beech handle. The other end takes the three replaceable cutters: two for hollowing and one for scraping. The cutters are secured with a hex-head screw, and an Allen key is supplied. It will appeal particularly to the novice turner, because one tool with several cutters compares favourably in cost with a set of separate tools.

With this tool you'll be able to turn bowls, platters, boxes, eggcups, goblets and so on. Instructions are included, and a short video clip on www.robert-sorby.co.uk shows how it's used. As with all turning tools, it's essential that the cutters are kept very sharp if they are to produce a smooth surface. However, they're easy to sharpen without the need to buy specialist equipment.





Mount the bowl in your scroll chuck jaws and start to hollow it out

Sealing and polishing

Apply two coats of cellulose sanding sealer. I have a love/hate relationship with this! For a start, the screw top won't come off as the sealer acts as a glue, and I usually have to grip it in a vice. I also find the fumes very strong. However, once I've wrestled the top off and opened the window, this sealer does a very good job. Do cover the lathe bed with an old cloth; dried drops of sealer are very hard to remove.

Follow this up with a few coats of Record Speed an eze friction polish. Finish off with carnauba wax and buff it up to a good shine.

Hollowing out the bowl

Remove the partly turned bowl from the screw chuck and mount it in your scroll chuck jaws. Start hollowing out from the centre using the curved scraper cutter, **photo 6**. Note that the tool handle is slightly raised here and the flat section on the shank is held firmly down on the toolrest.

Place a straightedge across the bowl and use callipers to check the depth, **photo 7**. Then continue to hollow out and smooth the bottom of the bowl, **photo 8**.

Shaping the rim

Start to undercut the rim using the hollowing cutter with the round end, **photo 9**. The angle of the cutter can be adjusted through 360°, making it ideal for undercutting.

Measure the wall thickness, and stop undercutting when you're satisfied you have taken away sufficient wood; you're looking to leave a thickness of about 6mm of wood remaining, **photo 10**.

Finishing off

Sanding the inside of the bowl is more difficult than tackling the outside. I find that a sanding disc used with a small electric drill or a flexible drive makes life easier and is more forgiving on the fingers, **photo 11**. The abrasive discs are backed with a Velcro-like material, and it's a quick and easy process to work down through the grits. Apply a dash of sealer, polish and wax on the inside and you're finished.

Sharpening the cutters

The cutters can be kept sharp with a diamond stone, but it's possible that you may consider buying the Sorby ProEdge sharpening system at a later stage in your turning career. The system includes a jig to hold these cutters, **photo 12**, because they're far too small to be held safely by hand when using the machine. I grind the cutters at 80°, and the ProEdge is calibrated to achieve this setting consistently.



As you work, check the depth regularly using a straightedge and callipers



Use the cutter with the round end to start undercutting the bowl's rim



Sand the inside of the bowl with a sanding disc held in a small power drill



Carry on shaping and smoothing the inside of the bowl in the same way



Check the wall thickness as you work. Aim for a final 6mm thickness



Sharpen the cutters using a diamond stone or a proprietary sharpening system

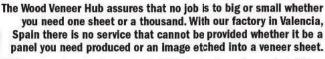


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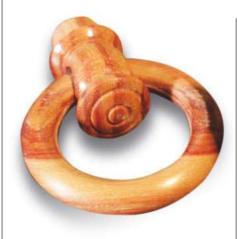
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Knobs and knockers



As much as I enjoy fixing the largest piece of wood I can find onto my lathe and making the shavings fly, there are also advantages – and a great deal of satisfaction – to be had from working in a smaller scale. These two furniture fittings are a perfect example of what you can achieve

here is a wide range of colourful timbers to choose from for turning work on this scale; indeed, many of them are available only in small dimensions. Sometimes the outer surface of an exotic hardwood can look very much like any other oxidised hardwood if the timber has been air-dried for a long time. It's only when the crusted surface has been removed that the dazzling nature of the grain's figuring is revealed. Woods like

Mexican rosewood, from which I turned this cupboard knob, and tulipwood, from which the ring handle was made, are two examples of exotic timber so beautiful that it's a delight to the eyes just gazing at the contrasting colours. **Clear vision** When it comes to small decorative work of this nature, it's the attention to fine detail

that's most important. Tools have to be precisely ground so that they generate accurate profiles and create clean crisp corners. I now have difficulty in seeing tiny mouldings clearly, especially when forming them in dark wood, so I find that a strong directional work light is essential. A magnifying glass will also help to check that inside V-cuts and fillets are crisp and clean.

1: THE ROSEWOOD KNOB

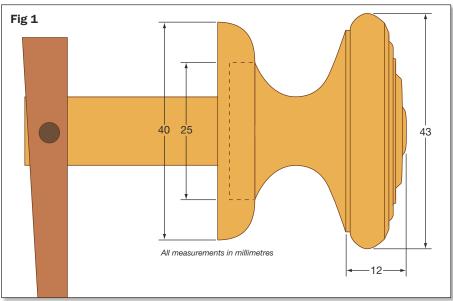
To hold the block of rosewood on the lathe, mount one end in a compression chuck. Then slice across the free end using a small 1/4 in bowl gouge to form the domed face of the knob. Start the cut slowly with the gouge on its side and anchored firmly onto the tool rest so it's prevented from snatching into the corner of the cylinder.

Slowly edge the gouge forward with the bevel in line with the cut. Once you've traversed the exposed corner and cut a little way across the face, the bevel of the gouge will be supported by the freshly cut surface, photo 1. You can now relax your grip slightly and allow the tool to cut at its own speed.

Detailing the face

Reposition the tool rest so it's almost parallel to the face of the knob. With a skew chisel held on its side, use the point of the tool to form two shallow V cuts in the surface, photo 2. Then form the section between the two V cuts into a bead using the point of the skew chisel again, photo 3. This time slide it in an arc to form first one side of the bead and then, by reversing the tool, the other.

Form the round centre button of the knob using the same technique. Then complete





Slice carefully across the end of the work to form the dome of the knob



Cut two circles with the skew chisel to form the two edges of the bead



Form the section that's left between the two cuts into a rounded bead



Complete the ogee moulding with the point of a ½in spindle gouge



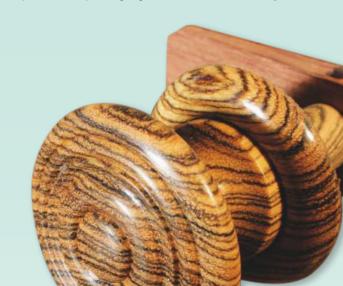
Slice down the neck of the knob with the point of the spindle gouge



Round off the rim of the knob by rolling a parting tool over from side to side



Reduce the shoulder section and form a dowel between it and the chuck



Sand the knob as smooth as possible,



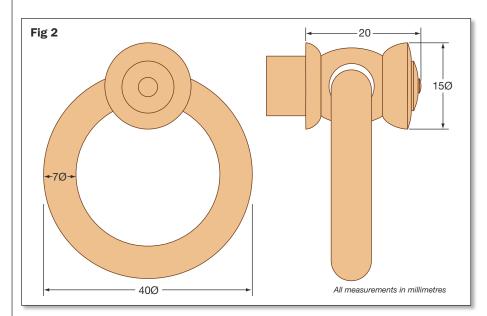
Cut the central hole and the recess for the knob shoulder with a scraper



Use the same tool to form the small round moulding on the collar plate



Sand, polish and wax the collar plate; then prise it gently off its faceplate



the ogee moulding shape by forming a shallow hollow with the point of a ¼in spindle gouge, **photo 4**.

Shaping the neck

Form the steep hollow section in the middle of the knob with the point of the spindle gouge. Hold the tool on its side as you feed it in and twist it round as it cuts so it's brought to a level position at the base of the hollow. Repeat this mirror fashion to produce the other side of the hollow so that the two sides are symmetrical.

If you feel the gouge slipping back sideways as you make your entry cut, you can prevent this with the simple addition of a vertical tool guide. I made mine using a masonry nail placed in a hole drilled in the tool rest, **photo 5**. Round off the rim of the knob using a parting tool, by rolling it over from side to side and cutting with the corners of the blade, **photo 6**.

After reducing the diameter of the shoulder of the knob, further reduce the dowel section to match the size of a standard drill bit. To clean up the parallel sides of the dowel, use a lateral cutting technique with the parting tool by slowly feeding it sideways, **photo 7**, using just the corner of the blade to make the cut.

Removing tool marks

With a fine-grained wood like this, you shouldn't need anything coarser than 250 grit abrasive to remove the tool marks, after which you can finish off using 600 grit. Cut the abrasive into small pieces and roll it up so you can work it into the coves and round the beads without damaging the corner details.

It's in this sanding stage that the full beauty of the wood is revealed. Its purpose

is not simply to make the surface smooth, but to remove all the tool marks. These sometimes become visible only with the finer grades of abrasive, and a stubborn blemish or scratch may appear as late as the polishing stage. If this happens, you won't be the first turner who has to go back and start all over again with the abrasive!

Polish and wax

Wipe the surface clean and apply a couple of coats of shellac polish with a soft cotton cloth. This works into the crevices of the fine detail, and after about ten minutes the surface will be dry enough to be waxed.

Carnauba wax creates one of the brightest and, for a project like this which is going to be handled, one of the most durable finishes. Rub the surface all over with the stick of the carnauba; then burnish this into the work with the cloth so it melts and spreads evenly all over, **photo 8**. Apply the stick of wax once more and then burnish again, gradually reducing the pressure so the work is brought to an even shine.

When you're satisfied with the finish, slice through the dowel with the point of the skew chisel in a series of deep V-cuts. You can either part all the way through by holding the tool in one hand and cradling the work in the other, or just take a fine saw to the last few millimetres.

Making the collar plate

Use double-sided tape to stick the collar plate blank to a small wooden faceplate. To cut the hole and the recess for the shoulder of the knob, use a small square scraper which has had its sides ground so that they don't bind on the side of the work, **photo 9** Then use the same tool to form the collar's small round

moulding, **photo 10**. This method relies entirely on the razor sharpness of the tool's edge to achieve a perfectly clean cut.

Polish and wax the collar plate in the same way as the knob. Then prise it gently off its faceplate with a chisel, **photo 11**, and pick off the double-sided tape with your fingernail.

You can now stick the shoulder of the knob into its recess in the collar plate, ready for use. Mine was destined for a cabinet door, so I fitted it with a simple latch bar as shown in the main picture overleaf.

2: THE TULIPWOOD RING HANDLE

To make the ring part of the handle, I first used my drill press to bore a 16mm diameter hole through the centre of the 40mm diameter ring blank. The ring blank can then be held on a wedged mandrel chuck while each side of the ring is formed in turn.

The mandrel chuck is made from a block of hardwood which is fixed in a chuck or on a faceplate, then turned with a 16mm diameter projection. This is sawn down the middle so a wedge can be introduced to expand the mandrel and grip the workpiece after it's been positioned, **photo 12**. You can see here that my mandrel chuck includes a clever extra feature: a sanding drum which will be used later to sand the inside of the ring smooth.

Forming the ring

Slice the ring to the correct diameter with a ¼in bowl gouge, **photo 12**; then part down to clean off the front of the disc. To form the ring, first scrape one side with the ring scraper, **photo 13**; then reverse the ring blank on the mandrel to complete the other half, **photo 14**.

Setting it free

To part the ring off, slowly feed the point of the ring scraper in, stopping the lathe periodically to test the amount of flexing the ring will do in your fingers. At some stage it will be ready to break away and be separated completely from the waste core, but before this happens you should complete as much of the sanding and the polishing as you can while it is still supported. Then use the drum sander on the mandrel to sand the inside of the ring.

Mounting the post

To hold the small block of wood for the ring post so it's more easily accessible, make yourself a simple cone chuck. This is a block of scrap wood which is screwed onto a faceplate or held in a chuck and is then turned to a cone shape with a gouge. The end is made flat by parting across it so that the block of tulipwood can be squarely fixed to it with a large blob of hot-melt glue, **photo 15**.

Apply the glue to one end of the block

and push it against the end of the cone chuck so the surplus glue is squeezed out. Centre it on the cone and hold it there for a few seconds so the glue can set. When the glue has cooled completely, gently trim off the corners of the block and reduce it to a cylinder with a ¼in bowl gouge. Bring the tool rest round so it's at 45° to the end of the work, and use the same freshly-sharpened gouge to slice the end smooth.

Drilling the post

Before drilling the hole for the ring, mark the centre of the post and prick it with a bradawl. This will help hold the %in twist drill in place while it makes its entry cut. Gently guide the drill through the centre of the post, and be very careful not to put any pressure on it as it emerges on the other side, **photo 16**, to avoid causing an unsightly breakout. Sand the inside of the hole smooth with some rolled-up abrasive.

Shaping the post

Mark out the full length of the post on the side of the workpiece, plus the two intermediate positions which will define the central bead section. Use the point of a skew chisel to cut in deeper on each side of this central bead. Then use a parting tool to form the bead by gently twisting the tool from side to side so that the corners of the tool cut sideways, **photo 17**, forming a shallow radius between the two skew cuts.

On the base of the ring post, use the parting tool to cut a dowel of a convenient diameter to match a standard drill size. Then, using the side cutting technique with the parting tool, round off the back shoulder of the post so it forms a small quadrant. Finally, place the skew chisel flat on the tool rest and use it to scrape the decorative lines on the head of the post, photo 18. These can then be sanded to form shallow beads.

Fitting the ring

The ring post has to be split in two so the ring can be fitted through the hole. Mount the post head first in a hole in a block of scrap wood lined with tissue. Make sure there's enough space around the post so it isn't restricted when it splits apart. Split the post from the rear so that the face isn't marked by the cutting edge, **photo 19**.

To assemble the ring handle, place the ring in the hole, apply some epoxy resin glue to the two halves of the post and use a small G-cramp and some scrap pads to hold them together again while the glue sets, **photo 20**. Then glue the dowel into a matching hole in the furniture to which it's to be fitted, and you're done.



Mount the blank on a mandrel chuck and slice it to the correct diameter with a ¼in bowl gouge



Then reverse the ring on the mandrel chuck to complete the other half



Drill a hole slowly through the post, taking care to avoid breakout as the bit emerges



Hold the skew chisel flat on the tool rest to scrape the lines on the post top



To form the ring, first scrape one side carefully with the ring scraper



Stick the ring post blank to a cone chuck with a large blob of hot-melt adhesive



Use a parting bead to form a shallow radius between the two skew cuts



Split the post from the rear so the face isn't marked by the cutting edge



Insert the ring and glue and cramp the two halves of the post together





If you often need to tackle polishing, cleaning, sanding or rust removal in confined spaces, a small dedicated tool is the ideal answer. This model from Proxxon is designed to fit the bill

Proxxon WP/E angle polisher

This little angle polisher comes in its own custom-designed case containing a good selection of accessories, all of which are replaceable. The machine has a reinforced polyamide body with a die-cast aluminium head which is permanently set at 90°. This is threaded to take the rubber backing disc with a Velcro-type covering to which the accessories are attached. It has a planetary gear system and is trade-rated, so it can be run for long periods.

Using the polisher

The variable speed knob and on/off switch are located on the top of the body and are easy to reach. There is also a strong metal hanging loop which can be used to suspend the polisher when it's not in use.

Proxxon claim that this is the smallest and finest angle polisher in the world, which is not easy to prove in a single test! However, the polisher is very well made, comfortable to hold and well balanced. The noise level is acceptable for this type of machine.

Its main use is to polish metal and plastic

surfaces to achieve a high shine, but it's designed to be used on wood as well. A separate clean mop would be required for wood, because the mop gets very dirty when used on metal and you would not want the dirt transferred into the wood grain.



machine which is dedicated to only one task. It has some woodworking uses, but it would probably be of more interest to those who work on a small scale with metal and plastics. IW





The controls are conveniently positioned, and there's a sturdy hanging loop



It's easy to fit and remove accessories using the rubber backing disc



The tool is well balanced and the soft body is comfortable to hold

SPECIFICATION

MOTOR	100W DC
SPEED	800-2500rpm
WEIGHT	720g

ACCESSORIES 3 polishing heads, 12 sanding discs, polishing emulsion, carry case

VERDICT

This little machine is useful for getting into difficult and awkward areas, particularly when restoring furniture.

PROS Ergonomically designed ■ Well built and finished

CONS A bit pricey

VALUE FOR MONEY PERFORMANCE



- **1** 01322 406967
- www.brimarc.com

While some manufacturers cut back the features on their mains tools to get a cordless model, DeWalt has simply ported over its mains model lock, stock and barrel – no bad thing, as it's a great machine

DeWalt DCS331 cordless jigsaw



SPECIFICATION

BATTERY	18V 3	3.0Ah Li-ion
NO-LOAD SPEED	(0-3000spm
STROKE LENGTH		26mm
BEVEL CAPACITY		± 45°
MAX DEPTH OF CUT	wood	135mm
	steel	10mm
WEIGHT		3.1kg

VERDICT

This saw is a great all-rounder with the capacities, attributes and performance of its mains counterpart.

PROS ■ Variable-speed trigger

■ Tool-free soleplate adjustment

All-alloy front end

CONS No worklight

No spring blade ejector

VALUE FOR MONEY
PERFORMANCE



FURTHER INFORMATION

- DeWalt
- 0700 339258
- www.dewalt.co.uk

This saw has solid features throughout, with the only real negative being the lack of spring ejection for the blade. This is due to the use of a clamping mechanism rather than the wrap-around collar found on the majority of the saws. It does its job very well indeed though, and blades are easy to fit.

The rock-solid all-alloy front section is complemented by an equally robust baseplate. It comes with a clip-on plastic anti-scratch shoe for working on finer surfaces, but where it really scores is the tool-free adjustment. A lever releases the lock, allowing it to tilt up to 45° to the left or right.

More useful features

DeWalt has borrowed a bit of Bosch heritage with the inclusion of a switchable blower, and it's very efficient at keeping the cutting line free of debris. However, the saw doesn't have an LED worklight – quite a rarity these days.

What it does have is an excellent variablespeed trigger. There's no additional dial to



The left-hand side of the body houses the pendulum setting lever

restrict the top speed; it's all done via the trigger, which is light enough to hold at a steady position during a cut if needed.

Being able to control the speed from zero through to its top speed of 3000 strokes per minute means that the saw is very manoeuvrable, especially in curved work, making it easy to slow down and accelerate accordingly to regulate the cut.

Pendulum selection features the standard range of positions to suit the work and the material being cut.

Summing up

The saw is a compact boxy style, measuring 305mm in length with the battery in place, which makes it easy to control through a range of tasks. With its heavyduty construction, slim grip and tool-free adjustments it certainly hits the mark. Its price makes it top value. **AK**



The soleplate can be tilted by up to 45° by releasing this locking lever



The saw made light work of tasks such as cutting out worktops for sinks and hobs

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Nominated in both categories by Fine Woodworking Magazine June 2007 - in an 18 bit road-test evaluation Author's Choice - BEST OVERALL / Author's Choice - BEST VALUE

Another day, another saw! This one is part of the Axminster Trade range, which means it has a motor that's continuously rated and is designed for small business use. It looks like a decent all-rounder

Axminster 10BSB2 table saw

This saw is based around a cabinet-style machine rather than a panel saw, but if you go for the standard package reviewed here, there's the option to upgrade to a small sliding carriage and additional cast-iron extensions to increase the cutting capacity. The basic package comes with two additional pressed steel tables; one a side table to gain additional ripping width, the second as a take-off support table at the rear of the saw.

Fitted with the side table, the saw has the capacity to rip a full standard sheet up to 610mm wide. If you opt for the

full kit, the ripping capacity increases and you gain a crosscut carriage with a 1220mm capacity. With twin slots in the main table and a

decent mitre fence supplied, you can also do smaller crosscut, mitre and compound work on the basic saw. The table slots are standard 19 x 10mm, so if you want to upgrade to a better fence there are plenty of options out there.

An excellent fence

The fence is based on the Biesemeyer style, running the full length of the table and clamping at the front and rear for working sheet stock, which gives it a good solid fit and eliminates flexing. There's also a small sub-fence for working solid timber stock safely; it can be flipped for cutting thinner materials.

The fence travels along the tables very slickly as it has a small wheel at the far end to give it fluidity, and with the large cam lock front lever, setting it to any dimension is a breeze. There's also a magnifying lens cursor to help set the correct width on the metric and imperial setting scale. A rack-and-pinion micro adjuster on the fence works well, making fine-tuning of a cut easy.

Easy adjustments

Blade adjustment is sweet. Large twin hand wheels control the rise and fall and the tilt, and both have folding handles to prevent them



Rise and fall and tilt settings have separate adjustment wheels

£799.94



A large paddle lever locks the fence securely in the selected position



Rack-and-pinion adjustment is a great feature to have, as is the lens cursor



The saw has plenty of guts and there's no problem with full-depth ripping cuts either



Compound cutting with the mitre fence results in a very decent finish

being knocked and damaged when not needed. A look inside the steel cabinet base shows decent-sized Acme thread worm gear that gives the adjustments such easy movement.

The saw has a right-tilt-only blade so it tilts in towards the fence. This is not a problem in general terms, but a left tilt lets you cut finer bevels close to the fence without the stock getting trapped. You can of course move the fence to the left of the blade, but if you're right-handed feeding the stock through isn't so intuitive. On the basic saw, unless you bolt the side table to the left, the ripping capacity is minimal.

Using the saw

Axminster has fitted a decent blade to the saw, and it performs well in both ripping and crosscut operations, although a finer blade is beneficial if you're working veneered sheets or doing a lot of crosscut work.

On a few compound cuts made using the mitre fence there was some marginal feathering, but the actual joint came up together crisply straight off the saw. It's more than capable of standard stock conversion as well, and it ripped some cherry to the maximum depth capacity without the saw faltering under load.

Summing up

There are saws of similar ilk out there, but if you're in the hunt for a solidly built, powerful and compact shop saw then this one from Axminster is certainly worth considering. It's fully and easily adjustable for setting the fence, tables and so forth, and you can retro-fit the expansion options if you need to.

It has a three-year parts and labour warranty as well, and for a saw that's designed to work hard on a daily basis, that's a good back-up to have. \pmb{AK}

SPECIFICATION

MOTOR		2200W
BLADE DIAMETER		254mm
NO-LOAD SPEED		4000rpm
TABLE SIZE		800 x 560mm
	with extensions	800 x 1170mm
MAX DEPTH OF CUT	at 90°	75mm
	at 45°	60mm
MAX RIPPING WIDTH	with fence	840mm
	with extension table	990mm
WEIGHT		184kg
ACCESSORIES	extension tables	£149.94
	sliding table kit	£399.95

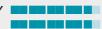
VERDICT

Sharing some attributes of other saws of its kind, this model is well priced, well constructed, and a good performer.

- **PROS** Smooth adjustments
 - Easy-to-adjust fence
 - Powerful yet quiet induction motor

CONS ■ Right-tilt-only blade

VALUE FOR MONEY
PERFORMANCE



- Axminster
- □ 03332 406406
- www.axminster.co.uk



The short ripping fence can be used for deep stock or flipped for thinner workpieces



The horn on the crown guard is handy for dropping down onto the workpiece



The main fence is accurately positioned at 90° to the table surface

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If you do any veneering work, you'll appreciate the precise cutting performance of a dedicated veneer saw. This one has the traditional convex blade pattern

Chestnut Tools veneer saw

This little veneer saw is made in Korea for Chestnut Tools of Canada. The precisionground saw blade has a folded steel back. The bubinga handle is 125mm long and 25mm in diameter, and is raked so the user's knuckles don't come into contact with the work.

The blade is slightly curved in the centre, as is the case with most traditional veneer saws, and this reduces the risk of tearing the veneer at the ends of the cut. The shape and precision pattern of the teeth are quite remarkable when viewed with a magnifying glass; there is hardly any set, but beware: the teeth are razor-sharp!

Using the saw

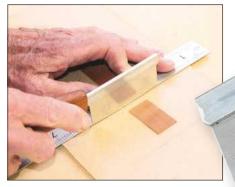
The saw is designed to be used in the upright position, with the blade resting against a straightedge on top of the veneer to be cut. If you carry out a lot of veneer work, particularly cutting geometric shapes for parquetry, this saw would be a good

addition to your kit as it is excellent for cutting across the grain. Because there is so little set to the blade and the teeth are so fine, the veneer is not ripped or damaged, and there is also very little kerf. This is a well-balanced little saw with good blade geometry which produces a very clean cut.

Mind your fingers

The blade needs to be guarded when not in use, to protect the teeth from damage as well as your fingers! I made a simple guard from a scrap of 6mm plywood 90mm long and 40mm wide. I drilled two holes in it and glued in 6mm diameter rare-earth magnets to hold the blade. A strip of aluminium glued along one side protects the blade edge... and the fingers. IW

£28.94



To make a cut, hold the saw upright and run the blade against a straightedge



I made a simple guard from plywood and fitted two small magnets to grip the blade



The aluminium edge strip protects the teeth when the guard is fitted

SPECIFICATION

OVERALL LENGTH	210mm
BLADE LENGTH	75mm
BLADE DEPTH	26mm
TEETH	50tpi
KFRF	0.3mm

VERDICT

This is quite an expensive saw, but it's very well made and should last many a long year.

PROS Comfortable raked handle

Convex blade reduces tearing Incredibly sharp teeth!

CONS ■ No blade guard

VALUE FOR MONEY PERFORMANCE



- Axminster
- **03332 406406**
- www.axminster.co.uk

Cordless circular saws are such convenient tools, but they need a fair amount of power. In the past this meant buying a machine with its own dedicated high-capacity batteries. Not any more...

Makita DHS710 cordless circular saw

batteries and chargers, which is expensive.

The capabilities of cordless power tools are generally defined by their batteries. For general work, lightweight tools with smaller

batteries are fine, whereas for more demanding jobs heavyweight tools with large-capacity batteries are needed. However, what this means is that you have to buy a variety of tools and also a selection of different

> Many manufacturers now sell tools without batteries and chargers so you can buy one set of batteries and use them

> for all your tools. This is a great idea, but only if all your tools

use the same battery. Makita have come up with rather a clever way around this problem. Realising that their most popular tools use the 18V Li-ion battery,

they've decided to make 36V tools that work with a pair of 18V batteries rather than making it necessary to invest in expensive dedicated 36V ones. This cordless saw does just that.

(body only)

Design features

The DHS710 is a substantial tool, with a heavy alloy baseplate and all-metal blade guards. The main body is plastic, with extensive softgrip padding. The hand grip incorporates the power trigger and safety button. There is also a front handle for additional stability. The blade is directly driven from the motor spindle and there's a spindle lock for easy blade changing. The motor is a conventional design with replaceable brushes.

The two batteries slide into the rear of the handle. There is a sophisticated battery protection system to prevent overloading and overheating. Warning indicators are positioned above the batteries and illuminate when either the motor or the batteries are overstressed and the power is cut.

Blade adjustment

The 190mm diameter blade provides a generous depth of cut. It can be tilted to 45°, and there are solid supporting brackets on both ends of the baseplate, with an angle scale clearly marked on the front one. Depth of cut is also easy to adjust with a large single lever at the rear

SPECIFICATION

BATTERY	36V	(2 x 18V)	
BATTERY CAPACITY	3.0 or 4.0Ah		
BLADE DIAMETER	190mm		
NO-LOAD SPEED	4600rpm		
MAX DEPTH OF CUT	at 90°	66mm	
	at 45°	49 mm	
WEIGHT		4.7 kg	

makita

ACCESSORIES hex wrench, rip fence, extraction nozzle, MacPac case

VERDICT

This is an excellent saw that's powerful and versatile. The ability to use a pair of 18V batteries makes it an irresistible choice for existing Makita users.

- **PROS** High quality
 - Good specification
 - Uses existing batteries

CONS ■ Flimsy-looking fence

VALUE FOR MONEY PERFORMANCE



- 01908 211678
- www.makita.com



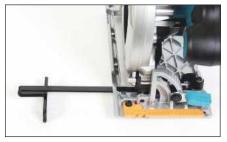
The two battery packs fit snugly side by side at the rear end of the saw



The solid sole plate is equipped with sturdy adjusters and clear scales



It's easy to remove individual batteries if only one needs charging



The side fence is easily extended and locked, but seems rather flimsy

Cross-point screwdrivers are very handy for inserting screws in hard-to-reach places. This little attachment from Makita is intended to make that job even easier

of the tool. A useful depth scale runs up the rear of the upper blade guard.

Using the saw

This is not a saw solely for cutting thin sheet materials and softwood; it can do considerably more. It's equipped with a relatively coarse blade which makes for very good ripping performance, but also acceptable crosscutting. With its robust construction and generous depth of cut, this saw is as good as a mains-powered tool. It will slice up sheet materials and softwood without hesitation, and it can also cope with hardwoods. We were particularly impressed with its ability to rip through a very hard piece of 30mm thick beech at top speed.

Summing up

This is an excellent saw. It's well designed, solidly built, and performs faultlessly. The idea of doubling up the batteries to increase the voltage is an inspired one, and should encourage many more purchasers who might otherwise have been dissuaded by the extra expense of a dedicated 36VC tool with its own battery and charger. AS

Makita Mag Boost attachment

The ever-increasing power of cordless screwdrivers - especially cordless impact drivers - can cause unexpected problems. Firstly, their high level of torque can break standard screwdriver bits. Secondly, their power is perfect for driving long largediameter screws, which, unfortunately the average magnetic bit is unable to support. Makita has come up with a clever little product that solves both of these problems at a stroke.

Increasing the force

The Makita Mag Boost is a magnetic attachment that fits around a standard screwdriver bit. It's like putting your existing magnetic bit on steroids, as it increases the strength of the magnetism by a claimed 17 times. This means that you can happily put long, heavy screws onto the tip, safe in the knowledge that they won't fall off.

The MagBoost set also includes five Impact Gold screwdriver bits, which are specially hardened to cope with the torque



produced by impact drivers and so should last considerably longer than standard bits. The set is available with Phillips, Pozidriv, Torx or square drivers in a blister pack. AS



The large dust extraction port is attached to the top of the upper guard



This cordless saw performs as well as many mains-powered tools

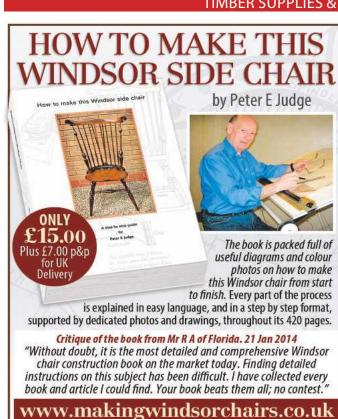




VERDICT

It can be slid forward on the bit to hold really long, heavy screws securely

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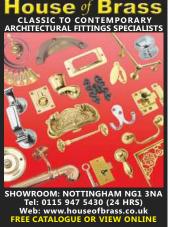




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PLEASE TICK:	FOR SALE \Box	WANTED 🗖

My advertisement (max 20 words please) reads as follows:

In your own write...

Here are just a few of the latest letters we've received since the last issue. Drop us a line on paper or via screen and keyboard to add your voice to the woodworking crowd; you might be one of the lucky few who will manage to get their hands on a coveted *Woodworker* badge!

SNAIL MAIL OR EMAIL?

You can write to us at The Woodworker, MyTime Media Ltd, Enterprise House, Enterprise Way, Edenbridge, Kent, TN8 6HF or send an email to mark.cass@mytimemedia.com





OAK WORKTOPS

Dear Mark

I would appreciate your advice on some worktop queries as outlined below please. I've been asked to make some kitchen unit worktops in oak, which is a new one on me.

Can you advise me which would be more suitable; European or American white oak? Also what would be a suitable treatment for the oak? Thank you in anticipation Regards

John Taylor

Hi John

When it comes to solid timber, most people are using pre-made strip laminated worktops in their kitchens these days. As well as coming in good long lengths (and 40-45mm thick too), they're more stable than a top would be if made up of wide, solid boards. They're also more convenient to work. However, they're not cheap... but then what is these days? I recommend you investigate these boards and at least look at a sample.

If you plan to go down the handmade route, you'll need a hefty woodworking machine or two and another pair of hands to help you lump it all around during the making process. Be sure to pick the boards yourself so as to get straight ones. I'd go for American white oak, as it's not so lively as the English variety and you stand a better chance of getting a flat work surface with it.

The standard wooden worktop finish is oil – plenty of coats (four or five at least), with a top-up every few months. I would strongly advise you to avoid fitting a timber top around the sink area, though. They always start to look bad after a short while and then the customer is unhappy. You really want stone, steel or tile under your taps.

Keep me posted!

BENCH MARKS

Hello Mark

I'm proud to say that I've finally completed the Lutyens garden bench that was featured in your magazine eight years ago. I just wanted to say thanks for the free plans that were sponsored by Screwfix. They were easy to follow and had both metric and imperial measurements.

It took a while as I've been collecting the mahogany a little bit here, a little bit there. I have made a lot of other projects in that time, but mahogany seems hard to come by.

It was my intention to make it for free, but it has taken me a while – yes, eight long years – and I did have to buy the screws and a little bit of oil to finish it. I'm well pleased!



Brian Gardner

Hi Brian

Judging from your photograph, I think it was well worth the wait. That mahogany certainly gives the job the look of luxury. And as to the time taken, it would surprise me if the rest of us haven't got a long-term project like that on our back burners!

Mark

TV TRIALS

I was watching one of those antique programmes on the television lately. The two so-called experts were discussing the pieces to be sold at auction that day, and they both agreed rather scathingly that one of them was obviously a 'shed' piece. They said it looked as if it had been knocked up in a weekend in a garden shed, by an amateur, hinting it was not worthy to be in the antiques sale.

I am no expert by any means when it comes to antiques, but what got my goat was the inference that anything made in a shed is not any good! What do they know?

This particular piece was probably made over a hundred years ago by an artisan without the benefit of any of today's power tools. How dare they denigrate our craft? I wondered if either of them had ever made anything themselves out of wood. It makes me so mad!

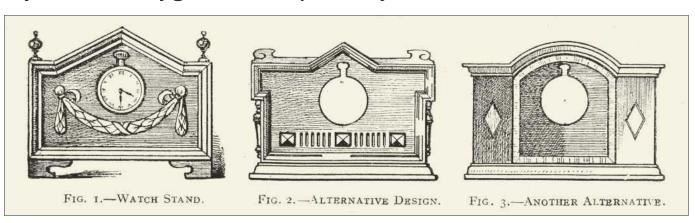
Mike 'Mr Grumpy' Pinnington

I agree, Mike; it's all too easy to criticize. I always try to see the positives myself.

Mark

On the shelf

Showing off your belongings became a vital part of Victorian life, and the mantel shelf in the front room was the centrepiece for the display of your finest worldly goods. Here's a particularly unusual addition



Well, they say there's nothing new under the sun... or does that only work in the summer months? While we might only be looking at evolutionary increments of the original concept presented as new, when you get down to it there are very few novelties awaiting us that haven't been tried before. Spare a thought for the original thinkers who wrestled with the restrictions of existing technology in earlier times, and yet still invented plenty that would change our world.

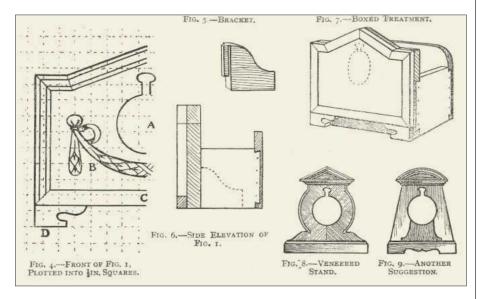
Ancient and modern

When I saw the watch holders pictured here in the August 1919 issue of The Woodworker, I couldn't help thinking of the current trend for stands and cradles for phones and other mobile devices. As well as presenting the face of said item to the world, most stands will nowadays amplify speech and music and charge a flat battery, as well as synchronising with other electronic equipment.

For our woodworking forebears, the mantel watch stand project was suggested as a neat and effective way of filling a gap in the room where a mantel clock would normally sit, and providing a centrepiece until such time as the reader could afford something better. The article went on to point out that the watch stand was a far better alternative for resting one's watch than 'hanging it on a nail, as is commonly done'.

Status symbol

Back in the day, the pocket watch was a good indicator of social status, as well as



providing a glimpse into the character of its owner. The combination of the associated parts like the chain (size, metal), any other adornments (medals, charms, masonic symbols), the waistcoat (style, fabric, condition), not forgetting the actual watch itself; all taken together had a tale to tell.

Making a profit

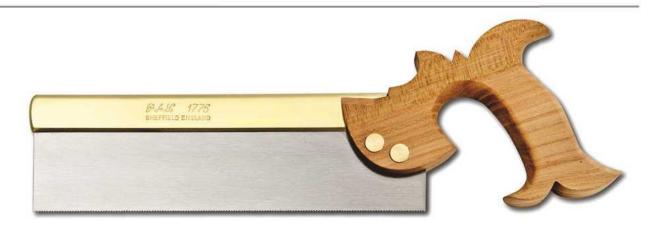
In the spirit of careful husbandry that was widespread at the time, it was proposed that the frugal woodworker could make a couple of watch stands, as 'the small expense of the one retained can be readily covered by the sale of the other'.

Here, then, were a few options for the keen

home woodworker to enhance his domicile and to make a holder that matched his watch - and possibly his aspirations too. Depending on the success of the job, the watch in its holder could then take pride of place on the mantelpiece or other prominent parlour position, often replacing the regular mantel clock. This may well have been temporarily 'off the premises' until payday came round again; such was the uncertainty of life a hundred years ago.

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The Woodworker

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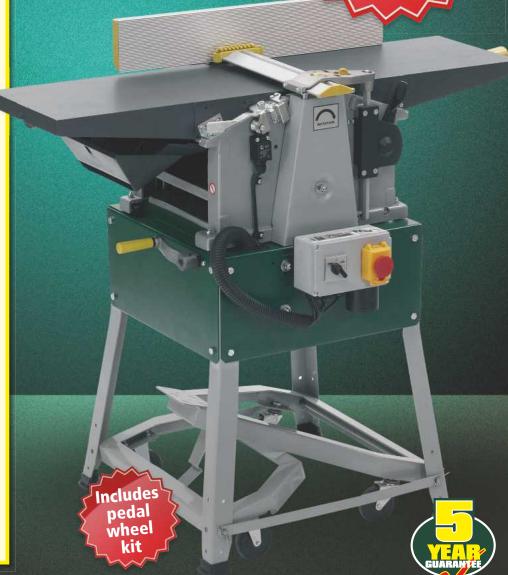
The Woodworker

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