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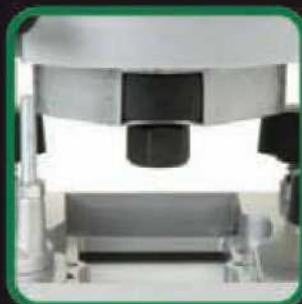
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TOOLBOX

PLANE SAILING

Phil Edwards' features on planemaking have provoked a lot of interest, especially from John Rimmer of Northwich in Cheshire. He tells WW he's been making wooden planes for over sixty years, and has produced several that he finds superior to handle compared with the metal versions to which they owed several design features. He has also found time to make some 1/4 scale miniatures – 'just for fun,' as he puts it. They all work, and have tempered and hardened blades just like their big brothers. True craftsmanship is still around...



WHAT IS IT?

Can you guess what our mystery item is this month? The first correct answer we receive will win a one-year subscription to The Woodworker.

Write in with your answer to:

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AS What is it?

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WOODWORKER AT WAR

Theo Quant sent us this picture of his father, Charles Quant, reading a Woodworker publication in the Sahara Desert during the 1939-45 War. Theo tells us his father was a radiographer in a mobile field hospital, and was a keen woodworker and carver all his life. After the war, Charles built and carved an altar, communion rail and processional cross in oak for the Lady Chapel of the local church. He died in June 2007.

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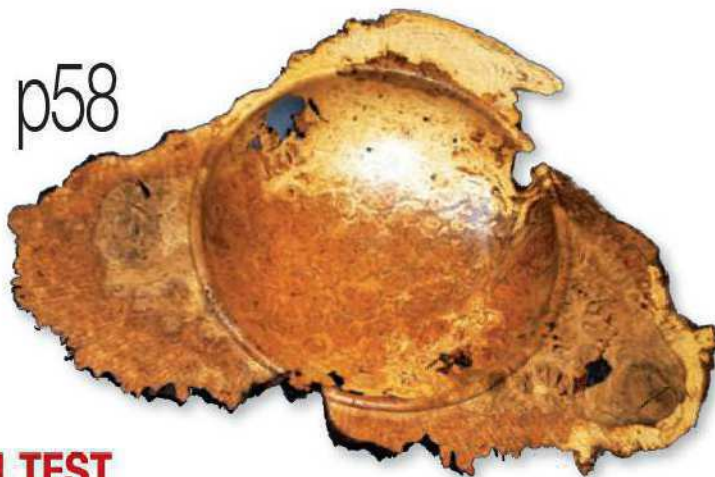
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WHAT'S NEW

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Axminster has just published its new Autumn/Winter 07/08 catalogue, which is packed with a host of new hand and power tools, workshop equipment and general handy bits and pieces that no self-respecting woodworker should be without. All the big brands are well represented, along with many new own-brand products. It's available free by phone or via the website.

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Three-way drill bits

There are some drilling jobs around the house that need different types of bits, and changing the one you're using for the one you need is a nuisance... if you can find it in the first place. So this new set of so-called Multi-Construction Drills from Bosch could be just the answer. They're just as happy drilling steel or masonry as wood (although their performance in masonry is hampered by the fact that they're used without hammer action). This means you can tackle jobs in all three materials without changing drill bits, and you'll have only one box to lose! This set of four drill bits in 5.5, 6, 7 and 8mm sizes costs £14, and other sizes are available individually. Bosch | 08447 360107 | www.bosch-pt.com



Steel wheels

Perforated steel sanding discs for 125mm random-orbit sanders have just been added to the US-made Microplane range. They're available in coarse, medium and fine configurations, which equate to conventional discs with 40, 80 and 120 grits respectively. They're recommended for use on bare wood; using them to strip painted finishes will shorten their life significantly. The discs are priced at around £13.95 for a pack of two. Rutlands | 01629 815518 | www.rutlands.co.uk

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25-26 Turning: Margaret Garrard
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www.john-boddys-fwts.co.uk

John Boddy's Free Demos

13 Turning: Simon Whitehead
20 Woodcarving: Peter Berry
27 Turning: Margaret Garrard
Details as above

John Lloyd Courses

15-19 Furniture making 2
22-26 Furniture making 3
01444 480388

Orchard Woodturners

13 Dave Reeks
01622 726532

Robert Sorby Woodturning Demos

2-3 Kraftkabin, Stoke-on-Trent
01782 416102

12-14 Irish Woodturners Guild,
Ballina, Co Mayo

www.irishwoodturnersguild.com

13 ASK, Birstall 01924 440610

13 Turners Retreat: Mark Baker
01302 744344

19 J Carr, Boston 01205 351555

26-27 R S Paskin Kidderminster
01562 829722

Rockingham Forest Carvers

13-14 Annual exhibition of
woodcarving, Elton (nr Oundle)
01832 733119

Shropshire Association of Woodturners

Hare & Hounds, Cruckton, Shrewsbury
25 Alan Cunningham: Texturising and
scorching on turnings
01743 240661

Southern Fellowship of Woodworkers

25 Mytchett Centre, Frimley 01306
730820

NOVEMBER

John Boddy's Courses

8-9 Turning: Simon Whitehead
15-16 Finishing: Jim Kitson
29-30 Turning: Simon Whitehead
01423 322370 ext 257
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John Boddy's Free Demos

3 Woodcarving: Bill Hodgson
10 Turning: Margaret Garrard
17 Finishing: Jim Kitson
24 Turning: Margaret Garrard
Details as above

John Lloyd Courses

3-4 Antique furniture care
5-9 Antique furniture restoration

19-23 Veneering & laminating

26-30 Furniture making 1
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10 Club members demo
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Robert Sorby Woodturning Demos

2-3 Kendal Tools, Kendal
01539 733774
10 Turners Retreat: Tracey Owen
01302 744344
23-25 North of England
Woodworking Show, Harrogate
www.skpromotions.co.uk

Shropshire Association of Woodturners

Hare & Hounds, Cruckton, Shrewsbury
10 Jimmy Clewes: Chatter work &
colouring
22 AGM 01743 240661

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Regency style



PETER DUNSMORE



Sofa tables have never gone out of fashion

because they're such versatile pieces of furniture. Peter Dunsmore describes how he made this stunning reproduction piece

Much of my inspiration for furniture projects comes from browsing through antique furniture books borrowed from the library, and this particular table was no exception. I saw a picture of a Regency sofa table with lines that were simple yet graceful, and having found a picture of what I liked, it was a simple matter to draw some plans, **fig 1**, and to produce my interpretation of this attractive piece.

Making a start

The casework is built round four 70mm mahogany posts cut to 125mm lengths. They are joined together by the rear frieze, two side pieces and the front upper and lower rail. Simple mortise and tenon joints are used to join the side and rear components together.

The pieces of mahogany that make up the frame surrounding the drawer fronts are dovetailed into the corner posts. The central drawer supports and kickers are jointed into the front rails in the same way, **photo 1**.

I used a half-lapped dovetail joint to fit both the lower central drawer support and the upper central drawer kicker into the front rails. A trench is cut in the rear frieze to accommodate the tenon cut at the rear of both these pieces, and at the same time the trenches are cut for the buttons that will be used to secure the top.

The small dividing piece that separates the two front drawers is cut slightly oversize, and small tenons are cut on either end to fit securely into rebates cut on the horizontal rails.

The only parts glued together at this stage are both side pieces into which the legs are rebated, and the posts at either end. The rest is left as a push fit, since the veneering of the rear frieze is best carried out as a separate stage.

Decorating the rear frieze

The rear frieze should be visually the same as the front and this is achieved using veneers and wooden beading to simulate fake drawers. After cutting the timber to



SOFA TABLE CUTTING LIST

All dimensions are in millimetres

Part	Qty	L	W	T	Material
Table top	10	600	150	18	mahogany
Case sides	2	450	125	40	softwood
Rear frieze	1	800	125	12	plywood
Corner posts	4	125	70	70	mahogany
Front rails	2	900	70	20	mahogany
Drawer centre runner	2	500	60	20	oak
Drawer side runners	2	400	30	20	oak
Leg posts	2	535	100	40	mahogany
Splayed feet	4	400	130	40	mahogany
Knuckle hinges	2	400	125	19	beech
Drawer fronts	2	380	85	15	mahogany
Drawer backs	2	380	85	10	oak
Drawer sides	4	500	85	10	oak
Drawer bases	2	500	380	6	plywood
Turned stretcher	1	1000	050	50	mahogany

You will also need sufficient mahogany to make the beading and other trimmings, and sufficient veneer to cover the top and make the inlay patterns (including the stringing).

also be cut, and this is easily achieved using a simple home-made rebating jig to guide the router.

Drawer guides are fitted as a means of guiding the drawer out of the opening and to prevent it from slipping sideways and jamming, but they are better fitted after the drawers are made and in place. The central drawer guide is a length of timber the same width as the vertical divider, and is fitted into a groove cut in the drawer support.

A close look at the plans and the photographs will show a small half-round beading around the perimeter of the lower side of the case. This serves the purpose of stopping the two tabletop leaves from swinging down beyond the vertical, and acts as a stop for them. These parts are made by rounding over the edge of a strip of timber and cutting a small rebate on it, so it makes a neat fit when the beading is finally glued in place, **photo 3**.



Making the Inlay patterns

The inlay patterns on this table are made from rosewood veneers to compliment the cross banding surrounding the tabletop. Make a template from some MDF for the required shape, **photo 4**, and use this to cut out the required number of inserts from the rosewood veneer. Boxwood or sycamore stringing is carefully applied around the perimeter of the rosewood using a smear of PVA to secure it in place. Some veneer tape is useful to hold the

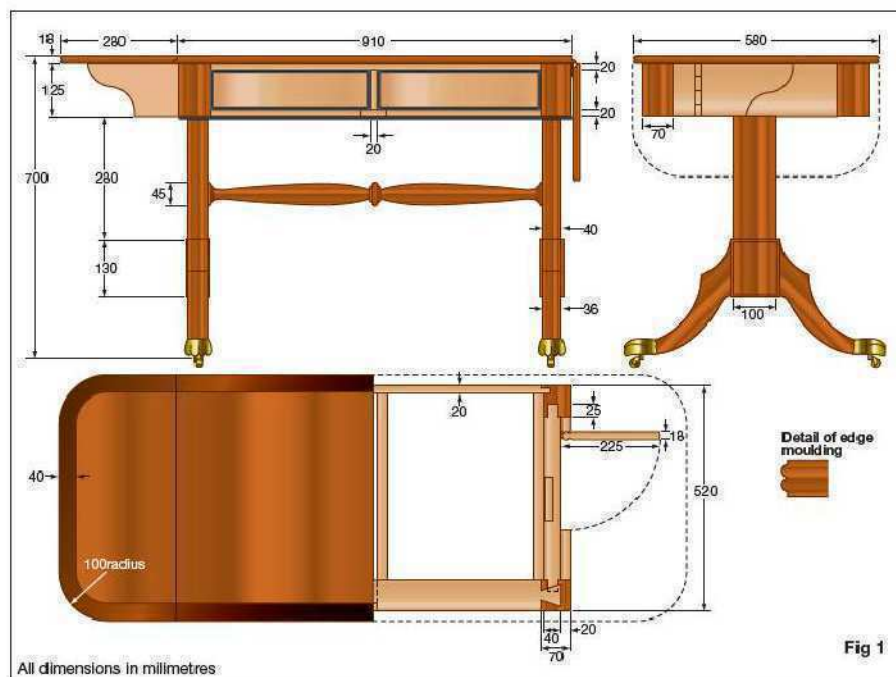
size and rebating the ends to fit into the corner posts, the front face is veneered with one piece of mahogany veneer.

Using a sharp knife and a straight edge, remove the excess from around the fake drawer fronts to make room for the thickness of the cock beading, **photo 2**. Cut a strip of veneer to fit in place between the drawers to simulate the drawer divider, but don't glue the beading in place at this stage.

The rear frieze can now be glued in place. The veneer should be a little proud of the corner posts to allow for the thickness of the decorative veneer still to be applied to them later.

Fitting out the Interior

With the case assembled, both drawer side supports and the central drawer support are glued in place into rebates cut into the case sides and rear frieze. The front of the central drawer support is dovetailed in place in the same way as the top kicker was. The rebates for both leg posts should

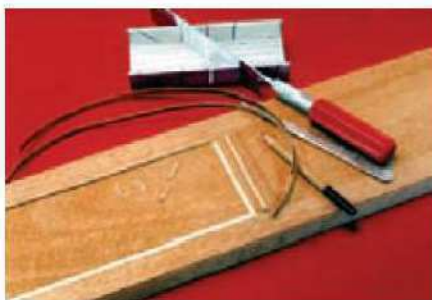


All dimensions in millimetres

Fig 1



1 Dovetail joints are used to assemble the casework.



2 Cut away the veneer to allow the cock beading to fit



3 A shallow rebate on the timber secures the beading



4 Make an accurate MDF template for the rosewood inserts



5 Hold the stringing in place with veneer tape as the adhesive dries



6 Make sufficient beading to fit around the two drawer fronts



7 Use a simple jig to hold the legs while you taper them with the router



8 A simple MDF jig used to cut the veneers square and straight



9 Tape the veneer sheets together before laying them on the tabletop

components together, photo 5.

Take care with the joints where the stringing meets. Lay this completed pattern on top of a piece of mahogany veneer and cut around the perimeter of the shape, ensuring that the blade keeps close to the edge of the stringing, and cut through the mahogany. Remove the waste and glue the insert into the window created in the mahogany. When this has dried, the completed picture is glued in place on

the case corner posts. This technique is repeated for the legs and the lower leg posts after they have been cut to shape.

Making the drawers

The drawer fronts are made from mahogany, and the sides and backs from oak. Each base is made from 6mm plywood. In a similar method to the rear frieze, a figured part of the mahogany veneer is used to decorate the drawer fronts, and is cut and fitted carefully so that when the drawers are closed and viewed together the effect is that the grain flows through both drawers.

I used a dovetail jig (the Trend DC400) to make both the through and lapped dovetails on these drawers. They could be made by hand in the absence of such a jig.

A quality drawer from this era had a strip of beading known as cock beading fitted around the drawer front, photo 6. Along the top edge, this strip is the full depth of the drawer front, but along the lower edge and both sides the strip only goes as far back as the beginning of the dovetails. This beading, too, is ebonised to match the strip on the lower edge of the case and also serves the purpose of protecting the veneered drawer fronts.



The rebates for this beading are cut using a straight router cutter. A little careful work with a sharp chisel and a mitre saw will ensure that the mitres are neatly cut at the drawer corners.

Making the legs

The two pairs of curved legs are easy enough to make, using an MDF template (fig 2). As can be seen from the plans, the radii of the curves are easily cut using the router fitted with a trammel bar. The template is then used to make four identical splayed legs. The tenons are cut on the ends to suit the mortises cut in the lower edges of the leg posts.

The taper is slightly more complicated to achieve, but I made a simple jig to





10 Make an MDF template to cut the veneer corners to shape



11 Bend the stringing around a curved former with a hot iron



12 Cut the cross banding into small wedges to fit round the curves



13 Pieces of carpet tile secure the cross banding without damaging it



14 Cut the recesses for the table hinges using a router

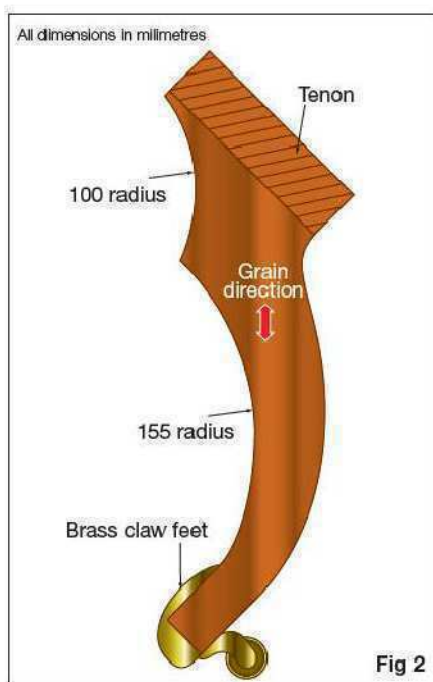


15 Make the buttons used to secure the top from a strip of softwood

cut it, **photo 7**. The photograph is self-explanatory, but it should be noted that the height of the inner walls should be the same height as the thickness of the legs before tapering them. A piece of timber screwed in place holds the end of the leg, and a small wedge is used to secure it in place at the front to stop it sliding about.

A 25mm bottom-cutting cutter is set so the cutter just touches the top edge of the inner wall. With the leg secure, the router is passed over the leg and the waste removed. It doesn't matter if the two outer walls are damaged in the process, as these are only there to support the extended router base. Obviously, for this jig to be successful both the inner and outer walls must be parallel with each other.

The leg is then removed and turned over so the process can be repeated, but this



time a spacer twice the thickness as before is required to lift the toe of the leg above the inside lower walls. To finish, use some abrasive paper wrapped around a cork block to smooth away any cutter marks.

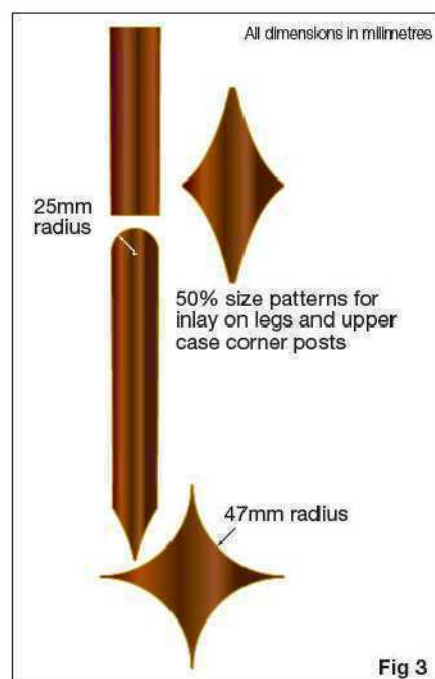
Continuing with the Inlays

The inlays on the legs (**fig 3**) are made in the same way as for the corner posts. A mahogany veneer with the motif cut into it is glued to the curved section of the legs. Gluing on the curves is a little trickier than being able to clamp onto a flat surface. I glued some plywood or MDF together and cut a curve the same radius as on the legs using a trammel bar and the router. This can be used to clamp the veneer in place, with some clear food wrap between the

moulds to prevent them sticking should any adhesive weep through the joints.

With the legs glued into the posts, a further inlay pattern is made and mounted on some mahogany planed to 6mm thickness, and this is glued in place at the lower end of the posts to cover the join between the legs and the post. I then formed some quarter-round beading on the edge of a piece of timber. I removed the beading and glued it in place around the top edge of these panels and onto the sides of the posts, taking care to cut neat mitres in the process.

I bored a hole on the inside face of each leg post to accommodate the turned stretcher between them. Finally, the tops of the leg posts are joined to the case side pieces with a half-lapped joint and are



screwed in place from the inside of the case. Cut the rebates accurately so both posts are parallel with each other when viewed from the side of the table.

Making the table top

The top is made from solid mahogany boards planed to 18mm thickness and glued edge to edge with a reinforcing plywood tongue stopped short of the ends. As is normal with this style of table, the grain runs from back to front and not from side to side. The purpose of this is two-fold. Firstly, the rule joint between the flaps and the centre section is easier to cut along the grain. Secondly, if the top were to bow or cup slightly, it is less likely that the opening mechanism would be affected.

The three sections making the top are treated as separate items. The larger centre section is a simple rectangle. The two outer flaps have their corners rounded to a 100mm radius; make an MDF template against which a trimmer is run to clean up the edges. The centre section is trimmed to size with a straightedge.



Veneering the top

Each piece is covered with mahogany veneer, with decorative pieces for the top and a balancing plain veneer on the underside to prevent the tabletop from cupping. A method I use to obtain accurate fitting joints is to make a simple jig, **photo 8**, from two pieces of 12mm MDF. The veneer is cut slightly oversize and clamped firmly between the boards, and a bearing-guided trimmer is used to trim the edge of the veneer square and straight. These pieces are then taped together with veneer tape, **photo 9**, and glued in place on the tabletop.

Make an MDF template with 60mm radius corners, **photo 10**, and use it to trim the veneer just laid on the flaps. Then remove the waste after softening the adhesive with a warm iron. Repeat this on the centre section, using a straight rule.

Stringing is applied against the mahogany veneer and held in place with a smear of PVA. To avoid splitting the stringing around the relatively tight curves, wrap it around a 60mm diameter curve. Use a hot iron to bend the grain and keep the curve, **photo 11**.

The rosewood cross-banding is glued in place a piece at a time. Small wedges are cut to work around the curves, **photo 12**, in such a way that they radiate out from the centre of

the 60mm radius. The straight run is easy to fit using some carpet tile and a piece of ply to secure the veneer in place for a short while till dry, **photo 13**. Any overhang is easily trimmed with a bearing-guided trimmer.

When this is completed, sand the tabletop smooth, working through to 240 grit abrasive and finishing along the grain. Finally, use a suitable bearing-guided trimmer to apply a moulding along the edge. If necessary, clamp the previously used template in place to act as a guide for the bearing. Use a straight guide for the centre section.

Making the rule joint

I used a pair of matching bearing-guided cove and rounding-over bit cutters each with a radius of 12.5mm for cutting this joint. However, before the rule joint is cut, it's important to cut the centre section to the exact length if the flaps are to hang vertically and rest against the beading surrounding the underside of the case.

To measure the width of the top accurately, measure the width of the case with the beading in place. Add 25mm, which amounts to twice the radius of the cutters used. The depth of cut should be set so the curve formed is an accurate quadrant and the matching cove sits neatly in place on the centre section. For all of these cuts, clamp a straightedge in place to guide the bearings on the cutters.

The hinges used for a rule joint differ from traditional hinges because the countersinks for the screws are drilled on the opposite side. The pivot point for these hinges is set 12.5mm in from the edge on the centre section, directly in line with the top of the quadrant, and the knuckle of the hinge is let into a rebate cut with the router, **photo 14** and **fig 4**.

Final assembly

The side flaps rest on two opening supports when the table is used, and the traditional way of fitting these was with a knuckle joint. These are difficult to make by hand; an alternative is to make a box joint and drill a hole through the joint into which a pin is inserted. The squared fingers on this joint need rounding over to enable the flap to open. Trend produce a cutter specifically designed to make a traditional knuckle joint, and this is the method I used.

The rear part of the top is fitted to the case with buttons that are made from a strip of timber, **photo 15**, and inserted into

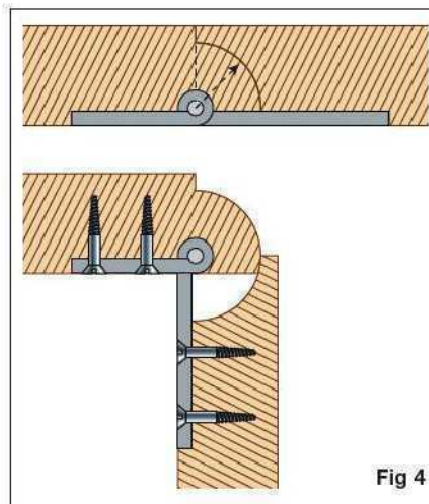


Fig 4

the slots previously cut into the rear face of the frieze. The front of the top is secured by screws, fitted through small slots cut into the top front upper drawer rail.

Finishing and polishing

Before polishing the table, the cock beading surrounding the drawer fronts and the beading around the lower half of the case must be ebonised. This involves staining them with black water stain. They are then sealed with shellac and fitted in place on the case after the rest of the unit has been given an initial application of polish.

The entire table is polished to a finish before the brassware is applied. I used button polish as this imparts a warm, golden hue to the timber. When this has dried, the table is flattened with 0000 grade wire wool before applying a black wax and buffing to a soft sheen. Then the drawer handles and claw feet can be fitted to complete the project.



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POST A LETTER



BEN RUSSELL



Ben Russell recently used elegant hand-carved lettering to create a series of dramatic sculptural features for a show garden. Here's how he tackled the job



1 Computers enable us all to lay out competent lettering. I used Photoshop, but a word-processor is simpler

2 You might need to print your letters on several sheets of paper and tape them together

Learn to carve lettering, and you can make a stylish and individual house or business sign. You can personalize gifts or furniture with carved inscriptions. In fact, lettering can enhance pretty well any woodworking project that you undertake.

You can cut lettering with a router using templates (or freehand, with a bit of practice), but machine-cut lettering is seldom distinctive or particularly elegant. However, the starting point for any letter carving is an understanding of the techniques — and we can break lettering down into two very distinct stages. First, the lettering has to be designed and laid out; then the individual letters are cut into the timber. Very different skills come into play at each stage.

The design for an inscription can be done on a computer, or by freehand drawing or calligraphy. Usually it's best to do the finished layout on paper, even if you draw it freehand, and then to trace it onto the planed timber. Designing your own attractive letter forms isn't easy, so unless you have some experience, you should start by copying other letters.

Design and layout

Anyone with a computer has the means to design and lay out inscriptions, **photo 1**. Even the most basic word-processing programs will space letters fairly well these days. On the other hand, if you have calligraphy skills, you may be more inclined to copy original lettering by hand.

So-called Roman lettering is particularly good for incised carving. It reads well, and the proportions always look good. In fact, many modern letter forms draw on these proportions, perfected 2000 years ago. Roman lettering was originally designed



PLANT LABELS

The incised lettering I've used here to illustrate the carving technique is cut into 100mm square oak posts. The commission came from designer Liz Houchin, for a garden she was showing at Bloom, the Dublin equivalent of the Chelsea Flower Show.

The clue to why she wanted the lettering lies in the garden's title – 'What's in a Name'. Each post bore the proper Latin name of a plant in the garden, from *hosta* at the short end of the scale, to *chrysanthemum leucanthemum*, which stood about 1.5m high. They made striking sculptural features in a pretty garden.



3 Transfer lettering from drawings, or a print out, rather than drawing directly on the timber



4 A razor sharp V-tool should cut across the grain of most timbers with little tearing



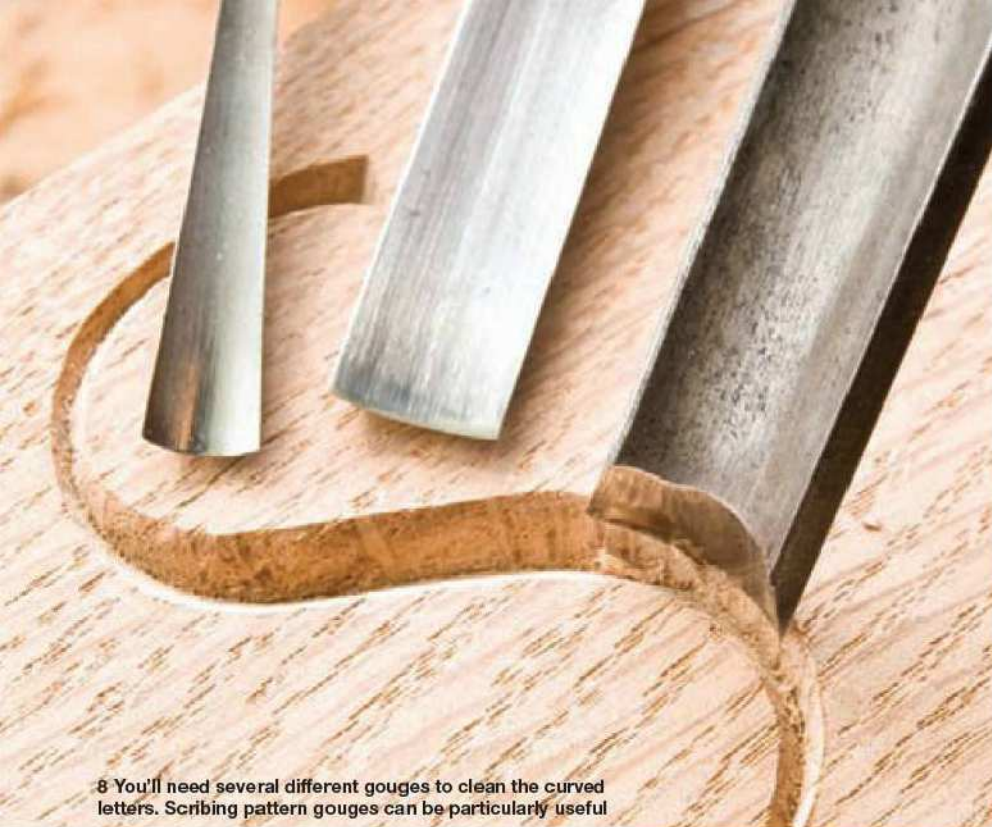
6 The V-tool can be raised at the end of the cut to start forming the serif



5 Keep your gouges razor sharp with a leather strop



7 The sloping sides can be straightened with a regular bevel-edge chisel



8 You'll need several different gouges to clean the curved letters. Scribing pattern gouges can be particularly useful

to be cut in stone, but it works very well in wood. The ends of the letter stems are flared to delicate points, called serifs, which improve legibility but are fiddly to carve.

Creating your inscription

You can photocopy printed letters and enlarge them, then cut out those you need, and paste together a word or inscription. Alternatively the letters can be traced in the sequence required and taped together piece by piece, **photo 2**. Once you're happy with the layout, it can be taped onto the timber

and transferred using carbon paper.

Since I couldn't find a suitable computer font for my project, and the budget for this project didn't run to original calligraphy, I ended up using a slightly complex procedure to get the letter forms and layout that I wanted. This involved:

- scanning an alphabet of suitable lettering;
- opening the scan in Photoshop Elements and sizing the letters to fit the timber;
- creating an outline of the letters;
- moving them individually into a new document, in the correct sequence;



9 I've ground a 6mm no 3 gouge to an exaggerated fishtail, great for forming serifs



10 A skew chisel is useful for cleaning letters and forming serifs



11 The skew chisel is also very good for cutting the end of the serif

TIPS FOR BEGINNERS

If you're cutting letters for the first time, remember these points.

- Larger letters are easier to carve than smaller ones. Small letters with tight radiuses are a real challenge, and require a wider range of gouges, so start with letters at least 50mm tall.
- Capitals are easier to carve than lower-case letters, since there are fewer tight curves and more straight cuts. Explore lower case once you've mastered capitals.
- Spacing is the key to good lettering. An even layout with slightly dodgy letters looks better than perfectly formed letters that are unevenly spaced. The white spaces between letters should be similar, not the spacing between the edges of letters.
- You'll need several carving tools for cutting lettering. I used (left to right) a 10mm paring chisel, a 9mm V-tool, a 10mm no. 5 gouge, a 10mm fishtail skew and a 6mm No. 3 fishtail



- making fine adjustments to the spacing;
- finally, printing out the full words and transferring them to the timber, **photo 3**.

Cutting the letter stems

Good incised lettering probably requires the most precise handiwork of any branch of woodcarving. My approach differs from the technique described in most books on the subject, and has several distinct advantages for beginners.

Instead of chopping the middle of the letter and doing two further cuts in from the edges to form the V, I use a V-tool up the middle of the letters, **photo 4**.

A razor sharp tool is essential, and I keep the edges in perfect condition by honing them on a strop – a strip of leather dressed with a mild abrasive paste, **photo 5**. I also regrind the tip of my V-tools so they make a crisper cut (see **Improving the V-tool**).

I work from one direction and then the other, to get right to the ends of the letter stems. You needn't cut to the full depth in one hit, but by using the standard 60° V-tool, the sides of the letters will have the

optimum incline. Try to avoid twisting the V-tool sideways as you work, particularly when you are following curves.

Starting the serifs

At the end of the letter stem, I raise the handle of the tool and cut a little deeper to start forming the serif, the amount depending on the size of the serif, **photo 6**.

The sloping sides can be cleaned and adjusted with a regular bevel-edge chisel, **photo 7**. Remember always that the angle of the V-cut remains constant, at about 55 to 60°. A consequence of this is that the depth of the V is far greater where the letters are broad than where they're narrow.

Carving curves

The curved letters are roughed out with the V-tool, and cleaned up with a range of curved gouges, **photo 8**. Those used on the concave outside slopes should be slightly more curved than the surface of the wood, and those used on the convex inside slopes should be slightly less curved. Scribing gouges with the bevel on the inner face are very good for working the outer curves.

Finishing the serifs

I use a couple of tools to finish the serifs. One is a fishtail skew chisel with a single bevel; the other is a fishtail no 3 gouge, **photo 9**. The top and bottoms of the letter stems can be cleaned with a skew chisel, **photo 10**. The 10mm fishtail skew is also good for cleaning up the letter sides and working into the serifs, **photo 11**.

Once the serifs are cleaned up and any wobbles in the edges of the letters corrected, you can plane or sand the surface of the timber to remove remaining layout lines. You'll find that the lettering becomes gratifyingly crisp at this stage, **photo 12**.

IMPROVING THE V-TOOL

I regrind new V-tools so I can produce crisp lettering with virtually no tearing of the timber. This involves improving the clearance behind the cutting edge, and making the bottom of the V more pointed. The bottom of a V-tool is usually curved, and the resulting V cut has a little curve at the bottom. By filing the inside of the V with a piece of diamond shim, the small radius can be reduced so the two cutting edges meet at a much tighter point. The outside can also be sharpened to match this, and the resulting cut has a much crisper feel to it.



The reground edge (right) cuts a crisper V than a new tool (left)



Use a diamond shim to take the roundness out of the bottom of the V

INCISED OR RELIEF?

This project showcases incised lettering, where the form of the letters is cut into the wood with a V cross-section. Incised letters are also carved with flat bottoms, particularly when the lettering is large and the deep V cut required would exceed the thickness of the board being carved.

Relief letters are easier to cut well than incised letters. To form them, the background is cut away, leaving the letters standing proud. While the two techniques can be used for a variety of different letter forms, they each suit distinct styles of lettering and it's preferable to bear this in mind when choosing one or the other. Relief letters are better cut chunky and unfussy, so there is less chance of unintentionally knocking off fragile bits. Incised letters, on the other hand, can be more slender, and made more elegant with wispy serifs.



12 After planing, the surface the letters become lovely and crisp

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Pear tree to mantel shelf

PHIL EDWARDS



Turning a plank of waney-edge pear into a decorative mantel shelf made Phil's mother-in-law a happy woman. Here's what was involved

While looking around the workshop, my mother-in-law spotted some large planks of timber complete with a live edge, including knots and bark. She thought one would make a great feature for her mantelpiece. Unfortunately, none of my pieces was long enough, so we paid a visit to our local sawmill, Yandles in Martock, and she chose a plank of steamed pear that had all the decorative features she wanted.

I let the plank acclimatise in my workshop for a few months before starting work, **photo 1**. As the plank was to sit above a fireplace, I wanted the timber to be pretty dry, otherwise it could warp or split from the heat of the fire.

Marking and cutting

I measured the existing mantel shelf and then spent some time deciding which piece

of the plank of pear to cut out. There were small splits at each end which I wanted to avoid, and also some big knots. When I was happy with my choice, I marked it out using a long straightedge, **photo 2**.

I put the plank into a pair of saw horses and roughly cut it to size using a hand-held circular saw, **photo 3**. I didn't cut too close to the marked lines, as I would be planing it down to its final size later.

Planing and thicknessing

The next task was to plane one face flat and to remove any wind. The plank was too wide to use my surface planer, so I flattened it the old-fashioned way – with hand planes. I used winding sticks to find the high spots and planed them away carefully – hard work, but worth the end result.

Next I used a jointer plane to flatten the face, **photo 4**. I then ran the opposite face



1 I let the plank acclimatise in the workshop for several months to ensure that it was dry

through the thicknesser to make it flat and parallel, **photo 5**.

Next, I flattened the back edge of the plank on the jointer. I took multiple cuts until the edge was perfectly flat and square to the top. Then I used the random orbit sander to sand the top smooth, **photo 6**.



2 A long straightedge made marking out the shelf a simple job



3 I set it on a pair of saw horses and cut it roughly to size



4 I flattened one surface by hand-planing it to remove any wind



5 I ran the opposite face through the thicknesser to get it flat and parallel



6 My random orbit sander produced a glass-smooth finish on the top



7 An abrasive wheel in a cordless drill cleaned off any edge debris



8 Final cutting to length was a straightforward job for the mitre saw



9 I applied delicate chamfers to the top edges with a block plane



10 Applying three coats of finishing oil was a three-day process

I worked down through 120, 180 and 240 grit grades to get a glass-smooth finish.

Tidying and trimming

I didn't want to remove all the bark and debris from the live edge, but I still wanted to clean it up a little, so I used an abrasive wheel in my cordless drill to gently remove the loose debris, **photo 7**. Any bark that

didn't come loose easily I left in place.

I then trimmed the two ends to their final size using the mitre saw, **photo 8**, and applied delicate chamfers to the top edges with a block plane, **photo 9**.

Finishing touches

Now it was time to apply the finish. I used Chestnut Products' finishing oil, flooding

a coat on with a brush, letting it soak it for ten minutes, **photo 10**, then removing the excess with a rag, before finally buffing the piece dry. The next day, I applied another coat using a rag. The day after that, I rubbed the piece out using fine steel wool, then wiped on a final, thin coat with a rag and left it to dry for a couple of days.

Installing the new shelf

All that was left to do was to fit the mantel shelf into its new home. I removed the old one carefully with a crowbar and hammer, **photo 11**,; it had simply been nailed in place with several rusty old cut nails. I chipped away the original mortar to give a level surface onto which to bed the new mantel shelf, and used PVA building adhesive to glue it into place. I applied plenty, and firmly bedded the piece down level, carefully centring it on the masonry below, **photo 12**,. I then left it overnight for the adhesive to set.

My mother-in-law was very pleased with the result – and I still have the leftovers from the original plank of pear as a bonus!



11 The old mantel shelf was held in place with several cut nails



12 I bedded the new shelf in place on a generous bed of PVA adhesive

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Paint windows

IAN TAYLOR



Kids love painting, but they can get through an awful lot of paper. Ian Taylor designed these simple wipe-clean painting windows as a greener solution

This was an unusual and enjoyable commission for a local children's nursery. The brief was to make three free-standing frames filled with polycarbonate sheet for the kids to paint on – using poster paints or other washable paints only, of course. You can see things like these in classy toy catalogues, but they're very expensive. The materials for the three I made were about £45, so if you wanted to make one for your children or grandchildren, this would be a cheap project. You could probably knock one out in an afternoon.

Basic materials

I used 44mm square PAR softwood from the local DIY superstore for the frames. If you wanted to go up-market you could use hardwood – beech would be a good choice. For extra strength, I made the frames using double mortise and tenon construction, with a 4 mm routed groove on the inside faces to hold the polycarbonate sheet. The feet are also joined to the frame with double mortises and tenons.

Two standard-sized 1220 x 600mm sheets of clear polycarbonate gave me enough material to make one large frame and two smaller ones.

Cutting the mortises

I cut the mortises on the drill stand, using a 12 mm Forstner bit. Drill out the joints at the mortise ends first, **photo 1**, then take out the waste in between. Repeating the drilling along the length of the marked lines guarantees an accurate mortise. One setting of the fence gives evenly-spaced double mortise, simply by working off each side of the wood in turn. You'll need a support



1 Use a Forstner bit in a drill stand to cut the mortises



2 Remove the waste to leave a round-ended mortise



3 Square up the ends of each one with a chisel



4 The finished double mortises should be clean and crisp



5 Mark the tenon widths directly from the mating mortises



6 You can cut the tenons very quickly on the bandsaw

PAINT WINDOW CUTTING LIST

All dimensions are in millimetres

Part	Qty	L	W	T
TALL FRAME				
Sides	2	1457	44	44
Top rails	2	654	44	44
Foot rails	2	600	44	44
Foot pads	4	44	44	10
Polycarbonate	1	1220	600	3
SHORT FRAME				
Sides	2	847	44	44
Top rails	2	654	44	44
Foot rails	2	360	44	44
Foot pads	4	44	44	10
Polycarbonate	1	610	600	3

block the same thickness as the drill stand table to ensure that the workpiece is supported horizontally.

You end up with round-ended mortises, **photo 2**, but it's easy to square them up with a chisel, **photo 3**, and if you're working in pine, you can clean them up very quickly, **photo 4**.

Cutting the tenons

The quickest way to cut the tenons is on the bandsaw. Mark up the tenon widths directly from the mating mortises, **photo 5**. Then run lines down to the shoulder lines to define the cutting positions. I squared the shoulder lines round each component with a marking knife first. This helps to ensure neat, close-fitting joints. With a tenon length of 35mm in the 44mm thick material, there's a very large gluing area, giving a really sturdy frame.

Whether you use a handsaw or a bandsaw for the cutting, **photo 6**, cut on the waste side of the lines and avoid cutting beyond the shoulder lines. To help ensure a

clean shoulder, I first chiselled a V across the face of the stock, **photo 7**, working on the waste side of the line, to give a guide for the saw, **photo 8**.

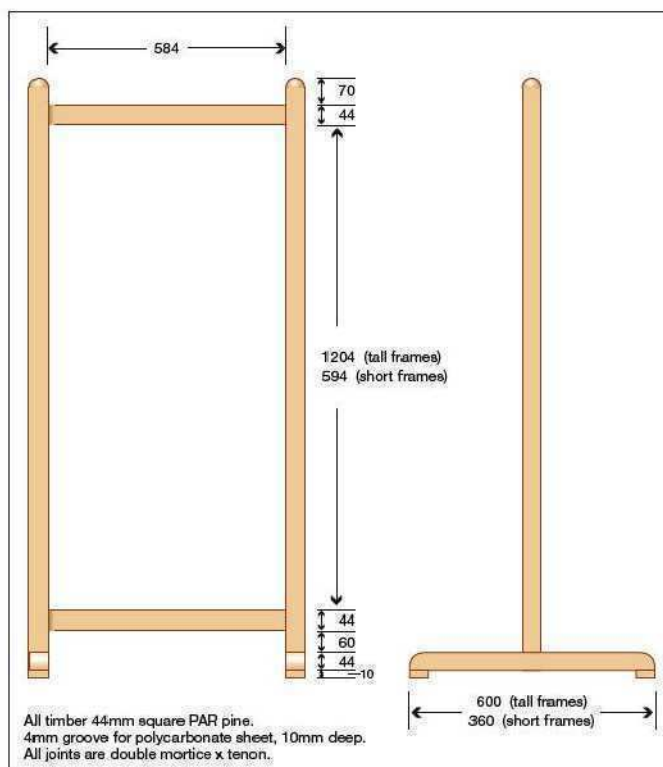
Take care that you get the correct orientation for the foot-joint tenons – they're at right angles to the frame mortises. It's easy to make a costly mistake here!

Trimming to fit

Once you've cut the shoulders, you might need to do a bit of cleaning up with a

chisel. Chop out the waste between the two tenons and trim their width to match the mating mortises. If you've been careful in your cutting, you should have a good tight fit, needing minimal fine tuning. But it's a good strategy to err on the side of caution, expecting a bit of trimming-up to fit, rather than ending up with tenons that are loose in their mortises.

I judged that the close fitting hefty double mortise and tenon joints should be





7 Use a chisel to define the edges of the shoulder lines



8 Cut the outside shoulders of each tenon with a hand saw



9 Cut the grooves for the polycarbonate sheet with a router



10 Glue on the foot blocks and shape them on the bandsaw



11 Sand the foot blocks and the tops of the uprights to shape



12 Use a rubber cleaning stick to maximise the life of the belt

sufficient to stand up to daily use. But if you wanted to make the frames even more robust, you could add triangular braces between the uprights and the legs.

Grooving the frames

I used my router and router fence to cut the 4mm wide grooves for the polycarbonate sheet. To ensure a neat job, it's helpful to dry-assemble the frame first and clean up the faces so that there are no steps where the vertical and horizontal components meet. You can do this by planing or with a random orbit sander.

Mark the line of the grooves and the adjacent faces on one side of the frame with a pencil. This allows you to register the router off the same face of the frame for each cutting step, **photo 9**. With this process, you don't have to be absolutely precise in the setting the position of the groove – even if it's slightly off-centre, it'll still be perfectly aligned right round the frame. Dismantle the frame and machine the groove on each component.



CUTTING POLYCARBONATE SHEET

The best way of cutting the polycarbonate sheet cleanly is to score the cutting line with a scriber or Bradawl. Align the scribed mark with the edge of your bench top and clamp the sheet to the bench with a solid straightedge along the scribe line – I used a 4 ft solid steel rule for this job. When it's all tightly clamped up, sharp downward pressure on the unsupported portion of the sheet will give you a clean break along the scribe line. All you need to do then is to sand it lightly with some fine abrasive.

Finishing touches

I decided to raise the cross bars off the ground by gluing small foot blocks on at the ends. For a neat finish, I rounded over the upper corners on the bandsaw, **photo 10**. I also rounded over the four sides of the top stubs on the uprights in the same way. Then I cleaned up these cosmetic refinements on my stationary belt sander, **photo 11**, and finished the job with some hand sanding to remove the residual cross-grain scratches. All this could of course be done with hand tool techniques, albeit a bit more slowly.

Getting a neat finish on the vertical posts needs a bit of trial and error, because for symmetry the profile on each face needs to be the same. I did the uprights for each frame as a pair, fine-tuning the sanding till they matched pretty closely.

With a job like this, the sanding belt clogs up pretty quickly because you're removing a fair amount of material. So it's a good idea to use a rubber belt cleaning stick from time to time, **photo 12**, to maximise the life of the belt.

Oil or nothing

To finish and weatherproof the softwood frames, I used three coats of a wipe-on oil. I finished each component before the final glue-up operation, allowing about 40 minutes drying time between coats. If you're using hardwood, there's no need for any finish unless you want to enhance the colour and grain pattern.

The gluing up is the only tricky stage, because the sheet material is very flexible before it is held in the grooves on all four sides. It's easy to get it into the grooves in the horizontals and one vertical, but then ensuring it slips into the fourth groove when you assemble the other upright can be tricky. Try a full dry assembly first, and if you can get yourself a helper for this step you'll find it much easier. I was working on my own, but I managed to struggle through with nothing worse than the occasional silent curse!

I was very pleased with the end result, and from the photos, it looks as if the kids had great fun putting the frames into use!



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The WOODSMAN'S TALE



RICHARD DUNMORE



The very nature of a woodsman's task is to travel to where the wood is. Richard Dunmore describes how cutting wood and sinking pints is all part of the job

One of the great pleasures of my job is that sometimes I get to travel around the country, cutting timber for a number of customers on a kind of circular route. I guess it's a bit like an Aboriginal going walkabout!

An early start

Recently, a number of jobs coincided so off I went down the M6. Up at 4am to miss some of the traffic, I was heading for a meet up with a friend who has a timber business at Vernham Dean in Hampshire. Paul Goulden inherited the business from his father, who ran it after his retirement. Paul now operates it with an excellent group of merry friends and some help from relatives.

His woodland is managed to produce fine-quality timber, and he also takes timber from the local area to feed his ever-growing customer list. As well as slab and planked timber, he also supplies woodturning blanks and timber for smoking food.

Pleasing the customer

On this occasion though, I was heading to the woods of one of his customers. I had a day's sawing of oak ahead. Due to good traffic and my early start, I was on the job by 8am. It took a little while for my new workforce to assemble, but then we were off processing timber of all dimensions to meet the requirements of the interested parties. In this case I was milling partly for



Starting the side cut into the butt



Cutting the lower two quarters

Paul and partly for the woodland owner. Paul knew exactly the cuts he would like, but the owner was completely lost when I asked him what dimensions he wanted. After some debate we agreed on a size and I focussed on pleasing my two customers.

Curry and chips

At the end of the day I upped the legs of the saw and we headed off to store it safely overnight and to prepare for the evening's entertainment. Paul very kindly offered to put me up for the night, so we travelled back to his house. After a quick shower and a discussion about sharpening chainsaws (talk about talking shop!), we went out with the family for a curry. It was a most enjoyable evening!

Wokingham Oak

We were up bright and early, to pick up the saw and move on to our second port of call. The next two days were to be based at a small country estate near Wokingham, dealing with a large oak butt. The lady who owned the tree had to have it removed from where it lay and her son wanted to have the timber milled and stored so that he could use it in the future. As usual, prior to arriving, I'd asked all the usual questions about lifting the timbers and getting enough manpower to load and unload the saw, where I might stay overnight and – most importantly – where the pub was!

The timber was a very tidy piece of oak, and prior to our arrival the ends of the butts had been painted to reduce the speed of drying out. I had been promised a number of helpers who were actually lodgers on the estate. As the primary breakdown of the timber usually needs only me and a machine with a driver, the band of helpers were not called in straight away.

Drawn and quartered

Once the pieces had been trimmed up freehand, the trusty Logosol chainsaw mill was applied and the timbers were quartered. As my instruction was to true quarter-saw the timber, I decided to quarter the timber rather than just halve it prior to bandsawing it. As soon as the quarters were released they were placed out of the way onto bearers, ready to be picked and placed onto the bandsaw later.

Bandsaw time

Just after lunch we were ready to start bandsawing. I managed to squeeze the bandsaw down next to the garages; this gave ideal access for the Manitou loader that had been allocated to assist. The site wasn't very level, but with a makeshift ramp made from planks we were able to sort this out.

We toiled on and the newly press-ganged workforce gradually got into the rhythm of loading and unloading the saw. By the time I turned the engine off at 7pm, they all



The Wood Mizer wedged in the milling position



The cut quarters ready for bandsawing



True quarter-sawing in progress



The next quarter ready for processing



The stack is built up layer by layer

looked absolutely shattered. I think I might have worked them too hard!

Our hosts provided a lovely evening meal and then we took a short walk out of the back gates of the estate to a very welcoming pub. It's amazing how good a pint is at removing sawdust!

Building the stack

Next day the engine was running at 8am (although I was on my own until 9), and we rattled off the rest of the timbers. We then spent some time setting up the stack where the timber was to dry. I stressed the importance of having a flat surface on which to build the stack, with all of the weight being transmitted down the stack to the ground. The guys carefully set this up using concrete fence posts that were shimmed to be level and flat. On top of those went 1in battens, followed by the timber that had been cut. All the sawdust was cleaned off to reduce the risk of pests and diseases.

I usually cut the sticks for the customer unless they have anything else they wish to use. The sticks are normally cut at 1in square, but if you want to slow down the drying a little you could go to 3/4in or less.

The risk here is that there is insufficient airflow round the stack and the drying stalls. This could in turn lead to mould and damage to the timber.

Once the guys had learnt the correct method for sticking, they were off and produced a very fine stack. I didn't see the finished stack, but it looked great as far as it had got. By the middle of the afternoon I was on my way back up the motorway to reload with sharp blades, ready for the next day's sawing.

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Ian Taylor



Ever struggled to get your dowel joints perfectly aligned? Ian Taylor explains the technique, and introduces some helpful jigs to make your dowel howlers a thing of the past

Phil Edwards



Phil Edwards' latest model – a mitre plane – has the iron bedded at a low angle, which makes it perfect for trimming endgrain. It also excels on the shooting board

Keith Smith



Keith Smith, alias The Woodsmith, presents his regular monthly round-up of no-nonsense answers to your woodworking problems

Ben Plewes



Faced with trying to plane boards that were too wide for his planer, Ben Plewes came up with a clever jig so he could use his thicknesser to do the job instead

SCROLLSAW TIP

Brian Halls of Boston wrote in to say he found Ian Wilkie's article on the scrollsaw (WW September 2007) most interesting. He went on:

"I've had a Hegner scrollsaw for some years, and initially I found I was getting tear-out on the underside when cutting ply and some other woods. To overcome this, I've cut a piece of 6mm ply the size of the saw table, cut a slot in it from the front and fixed it to the table with double-sided tape. This gives greater support to the underside of the wood being cut, compared with the rather large and unsupported area on the actual table. Tear-out is now virtually eliminated." Thanks for the tip, Brian!

WORKSHOP

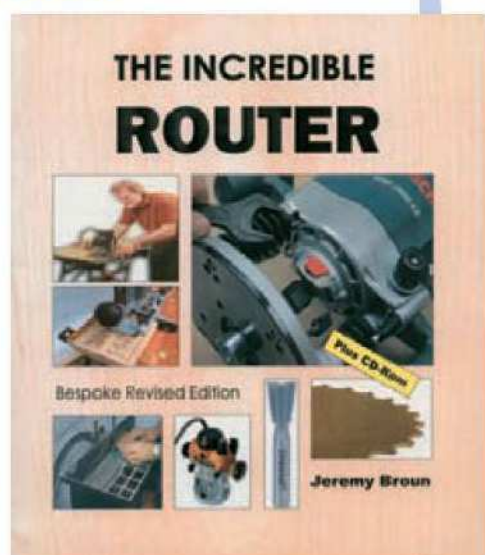
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He's now on the verge of completing what he calls 'a bespoke revised edition' of *The Incredible Router*. This time around the book comes complete with an interactive CD-Rom that not only brings the router alive, but also allows direct printing of jigs and project plans and gives access to a range of useful internet sites.

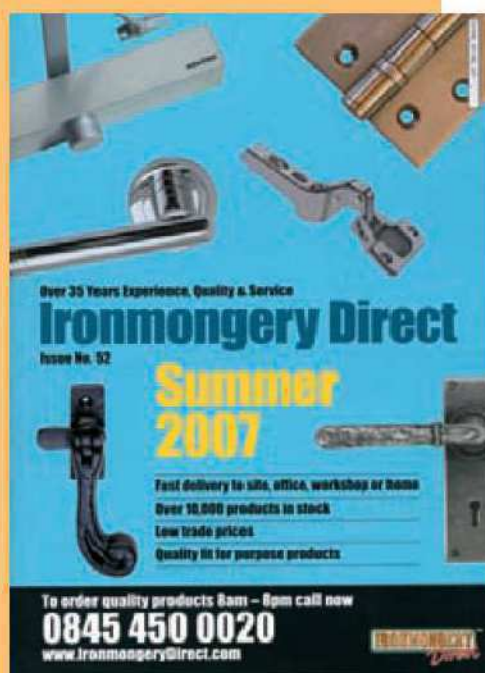
Jeremy is offering fifty WW readers the chance to own a personalised edition of *The Incredible Router* for just £29.95 (normal price £35). Because each book is printed individually, the owner can have their name and a message printed in the book, which will be individually numbered and delivered in time for Christmas. If you would like to order a copy, you can contact Jeremy on 01225 332738 or via his website, www.woodomain.com



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Dowelling techniques

IAN TAYLOR



Ever struggled to get your dowel joints perfectly aligned? Ian Taylor explains the technique, and introduces some helpful jigs to make dowel howlers a thing of the past

In principle, dowelling is the simplest of jointing techniques. You drill holes in two mating pieces of wood and join them together with a wooden pin that fits tightly into both holes. Unfortunately it isn't as straightforward as that. If anything, dowels need more care and precision than conventional cut joints. They often don't have the same strength and reliability, but for some applications they're the best choice. This article concentrates on the use of standard dowels. The Miller dowel system, which uses stepped dowels, is an interesting development, and I've covered them separately on pages 40 and 41.



1 Dowel centres are small lipped metal plugs with a central spike

Choosing dowels

Pre-cut dowels are widely available in DIY stores and tool shops. The market has now concentrated on metric sizes – 6, 8 and 10mm in diameter. They're typically 40mm long, with chamfered ends for easy insertion. Occasionally you might find the 12 mm diameter as well.

Beech and birch are the common timbers used, and they usually come with ribs or flutes, machined either along the length of the dowel, or in a spiral. These aid the flow of the glue and give it an escape route so it doesn't block the entry of the dowel as it's inserted in its holes.

Strengths and weaknesses

The first thing to keep in mind with dowel construction is that the joints have an inherently weak glue strength. The joint is typically used to connect two pieces of timber at right angles to one another. In one piece, the dowel grain direction runs parallel to the long grain of the timber, so the joints are very strong. But in the other piece the hole runs across the grain. So in this piece, most of the glue is in effect trying to connect the long grain of the dowel to the cross grain of the component. Cross-grain gluing is far weaker than when long grain joins to long grain. Only around



2 Drill one set of holes and insert the dowel centres



3 Align the second component and press it down to mark the hole positions



4 Drill out of square, and assembly will be impossible



5 Simple jigs have bushes at right angles for face or edge drilling



6 You still have to align the jig with your mark-up lines

the small arc of circumference where the component grain direction runs tangentially to the dowel is the glue joint likely to be totally satisfactory. This weakness means that dowels are probably not best used where the joint is likely to be stressed.

Horses for courses

I have a pair of rather nice chairs, made probably in the late 1930s, but unfortunately the seat rails are joined to the legs with dowels. The stresses of use over the years weakened these joints so much that I've had to rebuild them – still with dowel joints. They're still the best repair I can make.

Dowels are a good choice in other areas too. For example, invisibly joining the vertical sides of small cabinets to the base and top is an ideal application. Joints like these aren't under any great stress and careful

dowelling – with a suitable jig – is a very quick and accurate technique.

How many dowels?

A joint using only one dowel would be rare indeed; most require at least two. If you want to use dowels simply to align boards for edge gluing, you might want to use one every 300mm or so. But if you think about it, since each dowel is a very tight fit in its hole, the multiple holes in the mating pieces need to be very accurately aligned if they are going to fit at all. Unaided dowelling, using only pencil marking up on the mating workpieces, is in fact very difficult. Getting the marking and drilling

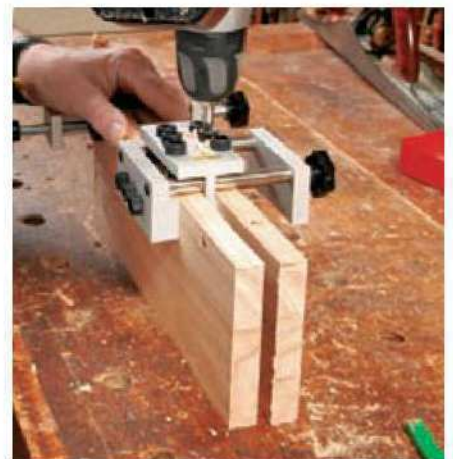
sufficiently accurate is virtually impossible. So the market has spawned many different designs of dowelling jigs, aimed at accurate hole positioning and, equally importantly, accurate vertical drilling.

Dowel centres

The simplest dowelling aid is the dowel centre. These are small lipped metal plugs with a central spike, **photo 1**. They are readily available in 6, 8 and 10mm sizes. You drill the holes in one component, insert the centres, **photo 2**, and then align the mating component in its assembly position, **photo 3**. When you press it into place, the spikes in the centres leave a mark where



7 A two-piece jig means marking up is unnecessary



8 You can drill each component at the same jig setting



9 This type of jig guarantees accurate hole alignment



10 A home-made jig can match your needs precisely



11 A typical jig tailored for just one job, then discarded



14 ...or fix it where you need it with a clamp



15 Hardened steel dowel plates are made in imperial and metric sizes



16 Hammer the dowel through the plate and into a dog hole in the workbench

you need to drill the hole in the second component.

While dowel centres might be simple to use, they are not the most sophisticated of aids. One particular downside is that you need a lot of care to ensure that the two components are correctly aligned before you transfer the hole positions. If the alignment is wrong, it will be permanently locked when you drill at the transferred positions. The other thing to watch is that you drill the holes vertically. Rush it and you will find that some of the holes aren't square, **photo 4**. And if that happens, you will probably not be able to bring the assembly together correctly.

So dowel centres are unlikely to be an important feature of your toolkit. For accurate work, you need another type of jig.

Dowelling jigs

There's a wide variety of jigs on the market. They range from the basic to the sophisticated. At the simpler end of the range, they might require you to mark up the hole positions on both pieces, and give you accurate bushings to guarantee vertical dowel holes, **photo 5**. With jigs like these, you will need to drill both components separately, and you'll still need to align them with mark-up lines, **photo 6**.

As the jigs become more sophisticated,

photo 7, they allow you to drill both pieces simultaneously, **photo 8**, and avoid the need for marking up. Consequently you get vertical dowel holes at precisely matched positions, **photo 9**. The more sophisticated jigs might come in two parts, with a clamp to align both pieces accurately.

You can expect to pay between £13 and £30 for this sort of jig. As you might expect, the more you pay, the more capable and versatile the jig is likely to be. All should cope with different dowel sizes.

Do it yourself part 1

You don't need a shop-bought jig to get accurate dowelling. Doing it yourself can be the ideal way to get accurate dowelling for high quality cabinet work. All you need is a rectangular strip of hardwood. Drill an array of guide holes along the strip, at positions that suit your design. Fit an end stop across one end of the bar, and you have an accurate jig to give you precisely matching holes in each component.

I always drill the holes in the strip on my drill stand, so that I can be sure that they are accurately vertical. With this design it doesn't matter greatly if the holes don't all fall accurately along the centre line. I usually drill a couple of countersunk screw holes between the dowel guide holes so the jig can be firmly screwed in position, **photo 10**. Any holes in the workpiece left by these screws are hidden after assembly.

The advantages of this approach are cheapness and, particularly, your ability to



20 The Domino loose tenons make a secure joint



12 The Joint Genie offers a regular array of guide holes.



13 You can secure it in a bench vice...



17 Check that the diameter of the dowel is correct before using it



18 The Festool Domino machine is a brilliant but expensive way of making joints



19 It machines slots rather like a biscuit jointer

make the jig precisely to match your needs – as long or as short as you want, with as many dowel holes of whatever size and spacing is appropriate. I tend to make up one specially for each dowelling project, **photo 11**, and then discard it when I'm finished. In any case, the wooden guide bushes wear over time so the jig loses accuracy and won't last forever.

The Joint Genie

The basic principle of the home-made jig has been taken on and improved by the Joint Genie. This commercially available jig uses a nickel-plated steel bar with a regular array of guide holes and vertical and horizontal mounting screw holes, **photo 12**. It comes with a good selection of side and end stops. And to increase its versatility, there's a selection of shims, allowing you to adjust the position of the centre-line of the dowel array.

You can hold the Joint Genie in a vice, **photo 13**, clamp it in position, **photo 14**, or screw it in place through the mounting holes. This jig will give consistently good results, and it won't lose accuracy in the same way as the wooden version. So it's a good option if you are a heavy user of dowels. The downside is that you need to pay for the privilege of using it, whereas the shop version is virtually free.

Do it yourself part 2

So far I've been looking at dowelling using commercially available dowels in standard

sizes. But what do you do if you've run out of dowels, want a contrasting timber as a design feature, or need a non-standard size? Well, in these situations, you can simply make your own dowels.

A number of suppliers offer a range of dowel plates designed to make custom dowels. These are simply a thick plate of hardened steel, with an array of accurately sized holes, **photo 15**. They're available in imperial and metric sizes. The holes usually have parallel sides for about 2.5mm, then taper out at a shallow angle, to give clearance as the dowel passes through.

To make a dowel, you simply hammer a piece of timber cut to approximately the right diameter through the required hole, **photo 16**. It helps getting started if you chamfer the edge with a penknife and take the corners off first with a plane. Check the diameter, **photo 17**, to make sure it's the size you need.

The Festool Domino

I noted earlier that a restricted gluing surface was one of the limitations of using standard dowels. In the last couple of years the German tool manufacturers Festool have been marketing a system that overcomes this and takes the concept of the humble dowel to a new level – the Domino, **photo 18**.

This uses a special oscillating cutter to cut a wide slot, as a biscuit jointer does, rather than a simple round hole, **photo 19**. Insert a matching 'domino' and you have

a loose tenon, **photo 20**. The system has three sizes of domino for different scales of joinery. It's a great leap forward, but it comes with a hefty price – around £500 for the machine. But for professional users it could be a good option, because it is very fast and accurate to use.

Conclusions

Dowel techniques have been around for many years, and they're still going to be around for a long time to come. Innovations like the Domino take things to a new level, but are too expensive for the majority of users and won't displace the simple dowel.

Don't expect dowels to solve all your jointing problems, especially in stressed applications like chairs. But if you're careful with your application and accurate in your drilling, you should get excellent results.

FURTHER INFO

Dowelling jigs and aids

Axminster Power Tool Centre

0800 371822

www.axminster.co.uk

Rutlands

01629 815518

www.rutlands.co.uk

Joint Genie

01308 861195

www.joint-genie.co.uk



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The November issue is out on October 19th



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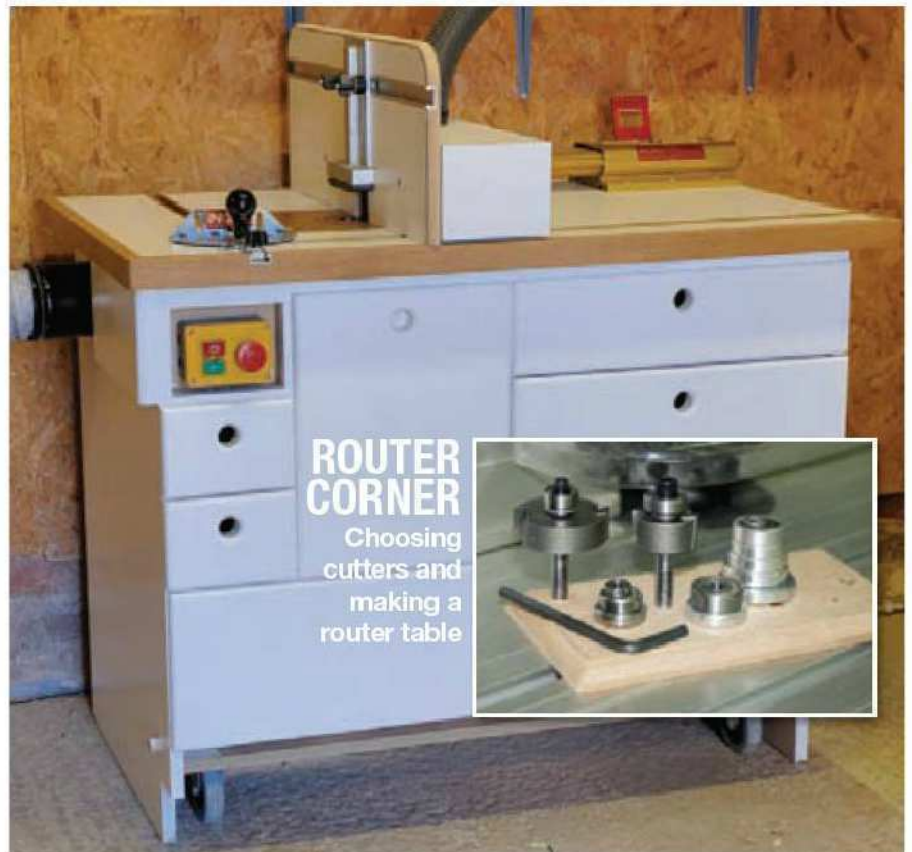
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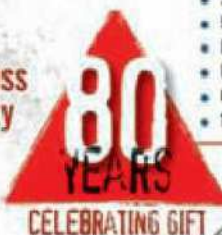
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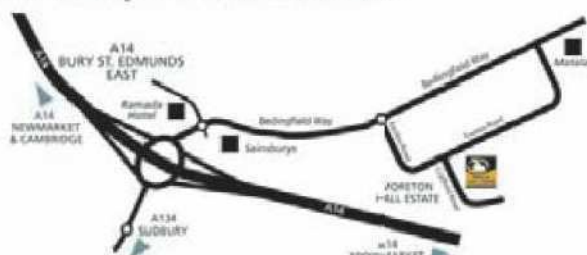
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Plane making

Part 8: The mitre plane



PHIL EDWARDS



Phil's mitre plane has the iron bedded at a low angle, which makes it perfect for trimming endgrain. It also excels on the shooting board

I made my mitre plane from what is rapidly becoming my favourite timber – gonçalo alves – although any tough-wearing hardwood such as beech or maple will be acceptable. You'll need a block measuring 245 x 75 x 55mm.

Begin by planing it flat and squaring the edges. Choose one face to be the sole and trim the ends of the block square to this.

On the bandsaw, rip off a 10mm thick slice from the block. Repeat this on the opposite side – these are the cheeks of the plane, **photo 1**. Remember to mark the pieces so they can be glued back together in their original orientation. Remove the bandsaw marks from the three pieces using a hand plane, checking that all the pieces are still flat and square. Set aside the cheeks for the moment – these will be glued back on after we have cut the throat and bed into the middle section.

Marking out the centre block

Now it's time to mark out the centre block. The bed line is at 38° and starts 80mm

from the toe of the plane. The abutments are 10° higher at 48°, **photo 2**. I chose to use 6mm thick tool steel for the iron in this plane, so I made the front of the mouth 13mm in front of the bed. If you use thinner steel you will, of course, need to narrow the mouth opening to suit.

To cut the centre block safely, I made a sled that travels in the mitre gauge slot of the table saw, **photo 3**. I attached some toggle clamps to hold the wood securely through the cut. Make two cuts for the bed and abutments.

This gives us three pieces; discard the small centre wedge. The larger section is the bed block (with the 38° ramp), and the smaller piece is the front block.

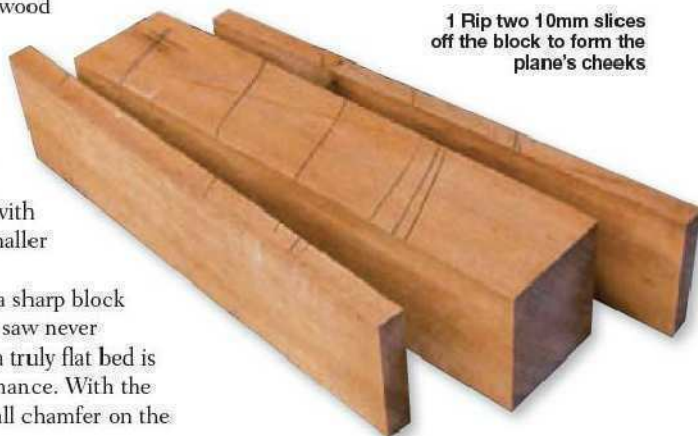
Clean up the bed with a sharp block plane, **photo 4**; the table saw never makes a perfect cut, and a truly flat bed is important for best performance. With the bed flattened, make a small chamfer on the

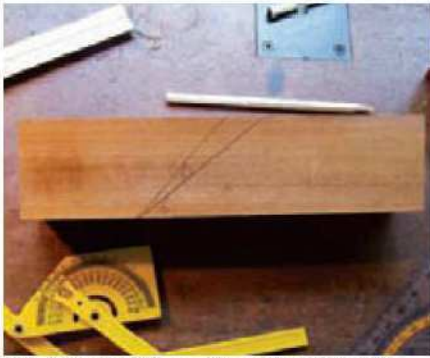
leading edge to prevent it from chipping, **photo 5**, and set it aside.

Marking out the front block

Next, we must mark out the abutments and throat on the front block. Mark a line across the top face of the block 75mm back from the top edge, **photo 6**. From this line, mark down the sides of the block at an angle of 65°. Then strike a line from about 3mm

1 Rip two 10mm slices off the block to form the plane's cheeks





2 Mark the bed line and the abutments on the centre block



3 Cut the centre block on the table saw using a temporary sled



4 Clean up the angled end of the bed with a block plane



5 Cut a chamfer on the leading edge to stop it from chipping



6 Mark the throat position on the top face of the front block



7 Mark the sides to define the throat position

above the lower edge upwards at 75°. This defines the throat, **photo 7**.

Using a marking gauge set at 6mm, mark down the front edges and the top face of the throat on both sides. These are the abutments for the wedge. On the top face, draw a line diagonally from the front edge (8mm out) back to the front of the throat. At the point where the two angles meet on the side of the throat, mark this height

along the front. Draw a diagonal line from this height out to the sides of the block, stopping 3mm up. Finally, mark a line across the sole 5mm back from the mouth, **photo 8**, to indicate where the wear strip will fit. This completes the layout.

Forming the wear strip rebate

With the block clamped in the vice, make two saw cuts across the mouth with a tenon

saw to remove a small rebate, **photo 9**. Clean this up carefully with a shoulder plane, **photo 10**.

We will fit a small piece of brass into this rebate to act as a wear strip – the area directly in front of the mouth takes a lot of pressure when planing, and can wear out prematurely. Rough-cut a small piece of brass to fit the rebate and file it to its final dimensions, **photo 11**.



8 Complete the marking up of the abutments for the wedge



9 Make two saw cuts across the mouth to remove a small rebate



10 Clean up the resulting rebate with a sharp block plane



11 Rough-cut a piece of brass to fit the rebate and file it down to size



12 Clamp the block in a vice and cut to the waste side of the lines



13 Use a chisel and mallet to remove the bulk of the waste wood



17 Round over the rear edge of the plane body with a rasp and smooth it with a scraper



18 Cut the wedge to shape and test-fit it with the iron in place. You can shape the top edge and add some decorative detail when you are happy with its fit

Cutting the throat

Clamp the toe block in a vice and, using a tenon saw, cut to the waste side of the layout lines, **photo 12**. I made additional saw cuts to make it easier to chop out the waste. Remove the material between the lines using a chisel and mallet, **photo 13**. Cut the top section of the throat first, then reposition the block in the vice and saw and chop out the lower section. With the waste material removed, use a paring chisel to clean up the surfaces, **photo 14**.

Gluing up the body

Glue the wear strip into the front block using superglue, **photo 15**. An accelerator speeds up the drying process to a few seconds. When dry, you can glue the cheeks and centre blocks back together.

A tight mouth is an asset on this plane, so make the iron now – you will need it to check the position of the mouth. When you glue the pieces back together, position the front block so the iron will not protrude through the mouth; leave it so the iron touches the wear strip about 1mm up inside the throat.

Remember to glue the cheeks back on in their original orientation to give an unbroken grain pattern. Apply glue to the sides of the centre blocks and sandwich them between the cheeks. Make sure that the gap for the mouth is correct and start applying clamps.

As you apply clamping pressure, the pieces may move around so keep your eye on things – a gentle tap to re-align the pieces may be needed. Leave the assembled

body overnight to cure, **photo 16**.

The next morning, remove the clamps from the plane and scrape off any glue squeeze-out. Make sure to remove any glue on the bed and abutments which will interfere with the fit of the iron and wedge.

Shaping the body

Draw a line on the top of the plane from the front edge of the abutments to the back of the throat where the cheeks touch the centre blocks. Remove this material using

a rasp and tidy up the surface with a chisel.

This makes it easier to remove shavings from the throat.

Then round over the rear edge of the plane where you will be gripping it, **photo 17**. Test the shape in your hands for a comfortable feel. With the shaping complete, use a scraper to remove any sanding marks.

Cutting the wedge

Cut a 50mm wide wedge on the bandsaw from an off-cut of timber to an angle of 10°. Clean up the saw marks with a block plane. Test-fit the wedge with the iron in place, **photo 18**. Check where it beds against the abutments – it must fit snugly against both sides simultaneously. Mark the abutments with pencil to see where the wedge fits and where it doesn't. When the wedge is fitted, you can shape the top edges and apply some decorative chamfers.

TESTING THE PLANE

Sharpen the iron and set it in place. Fit the wedge and set the iron projection for a fine shaving – the iron should barely protrude from the mouth. Take a test cut; does it give a full width shaving? Make sure the iron is projecting squarely, tapping the iron to centre it if necessary. If you find the plane won't take a very fine shaving consistently, you may need to flatten the sole. Put a sheet of 120 grit abrasive paper on a flat surface and, with the plane iron retracted but the wedge fully tightened, give the plane a firm push over the sandpaper. Take a look at the sole to see where wood has been removed. Give the plane another stroke or two to ensure that any bumps have been removed and test the plane again.



14 Clean up all the surfaces of the throat carefully with a paring chisel



15 Glue the brass wear strip into the rebate in the front block with superglue



16 Glue and clamp the cheeks and centre blocks together and allow to set



19 File the wear strip until the iron just peeks out of the mouth



20 Mark out the chamfers on the plane body and trim them with a block plane



21 Finish the plane by applying two coats of boiled linseed oil, then wax it and buff it up

Opening the mouth

Check to see if the iron will project through the mouth (it probably won't). Clamp the plane upside down in the vice and, using a small mill file, remove small amounts from the front edge of the wear block, **photo 19**. Test the iron again and continue removing small amounts with the file until the iron just peeks through the mouth. Refit the wedge and take a test cut. You may need to open the mouth a little more to allow the plane to cut without shavings choking in the mouth. Remember that you can easily make the mouth wider, but not tighter!

Cutting chamfers

With the plane working successfully, we can now add the final chamfers. Mark a line 4mm in along the top edges of the plane with a pencil gauge and continue it down the front. Then add a second mark, 10mm down the side of the plane. Cut the chamfers using a block plane, **photo 20**. Finish the chamfer on the front end of the plane with a chisel. A small mill file will also tidy up any rough areas.

Carry the chamfers down the rear of the plane and blend them into the curve. Finally, give the plane a light sanding with 320 grit sandpaper.

Finishing the plane

Apply two coats of boiled linseed oil to the plane and wedge. Remove any excess with a dry cloth after 10 minutes and leave it overnight to dry. Finally, rub a coat of paste wax into the plane (avoiding the bed and abutments) and buff it off.

MAKE A SHOOTING BOARD

This jig is for planing the ends of small boards perfectly square. The plane rides on its side against a fence and the work piece is held tightly against a second fence at 90°. The plane is then guided to remove shavings until a perfect 90° angle is cut.

I made mine from offcuts of 18mm MDF. Start by making a base board measuring 550 x 300mm. Cut a second board to 550 x 200mm and glue and screw the two pieces together, aligning them on the left-hand edge. Then attach a hardwood fence measuring approximately 200 x 50 x 25mm at the far end of the board. This must be at exactly 90° to the long edge of the upper board. Attach this with glue and screws. Apply wax to the right hand slideway of the board and it is ready to use.

I also screwed a batten to the underside of my shooting board so I could clamp it securely in the bench vice whenever I needed to use it.

The first few passes of the plane will remove a small amount of material from the board; this is normal. The plane is guided by the cheek of the sole to the side of the iron. Put the workpiece onto the board and align it with the sole of the plane. Draw back the plane and, with the work firmly held against the end fence, slide the plane forward and through the cut. Once you can take full width cuts through the board, you know the end is at exactly 90°.

You can make up shooting boards for any angle, 45° being a useful one to have. Combined with the low blade angle in the plane, you can then make accurate end grain cuts at your chosen angle.



1 The plane rides against the lower fence



2 Slide the plane forward and through the cut

Q&A

KEITH SMITH



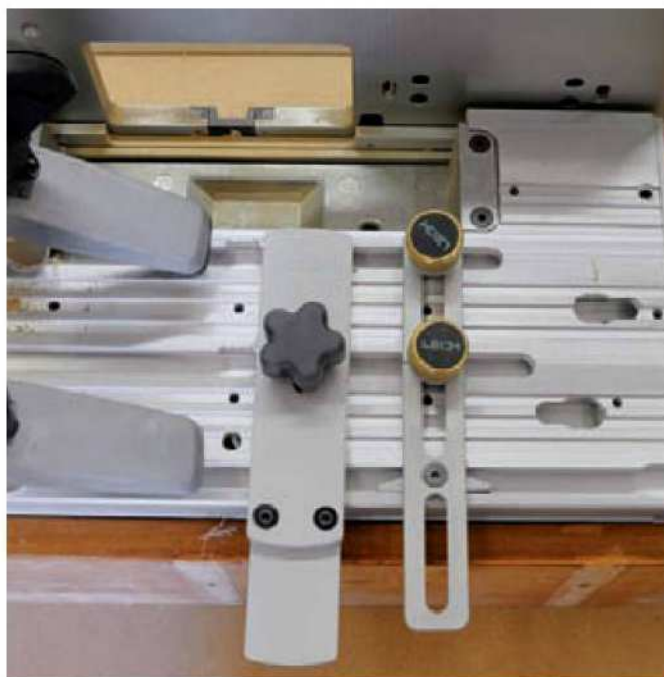
The Woodsmith's here again to give you more no-nonsense answers to all your woodwork problems...

Q I see from some of your articles that you have a Leigh FMT mortising jig. I have one and I've always had a problem with the vertical support bar; it is very hard to adjust and jams all too frequently. I can't see a way round using it, but have you found a solution?

Steve Wilde, Newport

A I know what you mean. It's the one weakness with this jig; having two locking screws encourages the bar to rack and jam. Mine got so stuck that when I tried to free it, it snapped. I then made my own with a couple of pieces of ply, which worked better than the original but was far from perfect.

Leigh obviously realised that there was room for improvement, and have recently brought out a replacement bar which works really well. It can also be used as a 'mortise steady' for small-sectioned stock. It's called an adjustable side stop fence B, part number 6166A and costs £14.69 from BriMarc Associates (01926 884440, www.brimarc.com).



The replacement bar fitted to the FMT(left), and the old version (right)

Q Having made a pine chest for our house, I'm disappointed with the finish. I wanted it to have an antique look, so I stained it with antique pine spirit-based wood dye before waxing it with clear wax, but I haven't achieved the appearance I wanted. It still looks too new and rather yellow. I'm now making another chest and would like to use a different finish. What do you recommend?

J Hayes, Hereford

A I'm not a fan of antique pine stains. If I want to stain pine down slightly, I normally use English Light Oak stain as this gives a more subtle finish. However, my treatment of choice for new pine is a product called Pine Antiquator. This is a water-based solution that gives a far more realistic aged appearance than any other stain I know.

Apart from colouring the wood, it also affects its surface sheen, and because it isn't a pigment it doesn't collect in the grain, so it looks far more natural. It's relatively odour-free, easy to apply and will take most finishes other than water-based varnish. However, it's not suitable for use on hardwoods or veneered surfaces.

Pine Antiquator costs £16.95 for one litre, which includes postage and VAT, and is made and distributed by Hicks Sharps and Co (01234 822843 www.pineantiquator.com)



Four finishes on pine (clockwise from top left): English light oak stain; antique pine stain; antique pine varnish; Pine Antiquator

Q Can you tell me the best way to deal with tarnished brass door furniture?

J Lewis, via email

A Once the factory-applied protective lacquer has broken down, there's no real alternative but to strip it all off and start again. Ideally the furniture should be removed from the door but that isn't always possible without damaging the surrounding paint finish. In this case, mask the area around the fittings. The remaining lacquer coating can usually be removed with acetone; use wire wool or a brass wire brush, and wear eye protection to guard against splashes.

Now you have two choices. Re-lacquering is the easy-care option; Rustin's produce a metal lacquer which is brushed on and costs less than £3, and there are some spray lacquers available which are particularly good for larger flat surfaces. The other choice is more high-maintenance; use metal polish to bring up a good sheen, and then polish the metal with a thin coat of paste wax. This gives a lovely natural finish but will need re-waxing frequently, possibly as much as every week depending on exposure.

Q I have a DeWalt DW625 router with variable speed settings which go from 1-5, but I've lost the manual that came with it and I can't find out what speed each number represents. Do you know, and if so can you print a list of the speeds for each number? Thanks.

Alan, via email

A I'm regularly asked this question, perhaps because when people first move up to such a large router they tend to use the smaller cutters they've been using previously, and only need to know the speed settings some time later when they purchase their first really big cutter. The speed settings are printed in the manual, but for anyone who has lost theirs, here they are:

- 1 = 8000rpm
- 2 = 12000rpm
- 3 = 16000rpm
- 4 = 18000rpm
- 5 = 20000rpm

These speeds are only a guide, as the loading on the motor will affect the actual rotational speed of the cutter.



The speed control on the DeWalt DW625



Large cutters need a slower speed setting

Q I'm just about to replace my front door, and want to renew the hinges at the same time. There are only two 4in hinges fitted to the existing door, and while I've seen some front doors hung in this way, it seems that most external doors have three equally-spaced hinges. Can you tell me the correct positioning for hinges fitted to a standard outside door?

Adrian Wells, Lincoln

A With any door, the top hinge takes most of the load but it's poor practice to fit only two hinges to an external door, even if it is a lightweight type. This is because the central hinge is fitted to prevent the door from bowing and binding in the frame. However, it's a lot easier to fit a door with just two hinges; when three or more are fitted, the hinge pins must be perfectly in line otherwise the door will never open and close properly.

The typical arrangement for fitting hinges to an external door is to fit the top hinge 150mm (6in) down from the top edge of the door and the bottom hinge 225mm (9in) up from the bottom edge, with the central hinge spaced equidistant between the two. However,

when hinges are fitted to a mortise and tenoned door, they must be positioned at least 12mm (1/2in) away from the end grain of the tenons.

Choose 100 x 76mm hinges with solid cast leaves for strength, and attach them with a full set of screws (one for each countersunk hole in each leaf). The screws should be at least 38mm (1 1/2in) long to ensure a secure fixing. Drill a pilot hole in the door at each screw position, and make sure that the screw heads fit flush in their countersinks, or the door will bind.



This 100 x 76mm hinge has leaves 30mm wide

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Faced with trying to plane boards too wide for his planer, Ben came up with this clever way to use his thicknesser to do the job instead

If your workshop is anything like mine, the addition of this surface thicknessing jig will be a welcome one. It does exactly what it says on the tin, in so far as it allows you to surface a wide board using a thicknesser.

The problem I encountered in my small basement workshop was that I had just enough room for a small 6in surface planer and a portable thicknesser. The thicknesser can plane timber just over 300mm in width, while the overhand planer will only accept 150mm wide boards at its maximum capacity. There lay the problem: what was I to do with boards wider than this? After a little careful thought, I came up with this simple surface thicknessing jig to save the day!

How the jig works

The principle behind the jig is simple. It allows you to hold a rough-sawn board in position while it's carried through the thicknesser. This is the key to the jig's success. By using adjustable bolts to alter the orientation of the top surface of the jig, a rough-sawn board can be supported at various points along its length so it won't rock on the jig as it passes through the thicknesser. By supporting a board like this, the thicknesser can then do what it's good at – planing one face of a board truly parallel to its opposite face.

I'm using a Makita thicknesser (reviewed later in this issue), but the jig should work just as well with other manufacturer's machines. The design is a useful one, and should add productive value to any small workshop where the overhand planing width available is less than the accessible thicknessing width.

Sizing the jig

When deciding on the jig's length, it's worth having a good look at your workshop's overall size. I found it best to go for a medium-length jig that's fairly easy to handle, while being long enough to cope with most of the boards I need to surface-plane. Mine was 1690mm long. You can always make a longer version of the same jig for those rare extra-long, extra-wide planing jobs.

To work out the width of the jig, take





the maximum width accepted by your thicknesser and allow 3mm clearance on either side. My thicknesser has a maximum planing width of 305mm, so I made my jig precisely 299mm wide.

Preparing the boards

I've used melamine-faced chipboard for the bottom face of the jig. The melamine face reduces friction, and can be coated with a silicone spray or a furniture polish containing silicone to make it slide even more easily.

Cut the melamine board for the bottom face to its finished size. Then cut a second board to the same size for the top face. Unlike the bottom surface, where a smooth non-porous surface is important, the top surface should ideally be a board material with good overall strength, such as plywood or MDF.

Adding the battens

The next step is to make a series of battens which will separate the two boards. By securing both boards to the battens, their overall strength and rigidity is increased. Vital clearance is also created for manual adjustment of the bolts which will form the basis of the board support system. This adjustment system ensures that the board is securely supported on the jig so it can't rock as the jig passes through the thicknesser. This crucial step guarantees that the planed surface will be completely flat.

I've opted for battens measuring 45 x 19mm, **photo 1**. These are just thick enough to comfortably hold a screw, and wide enough to provide ample clearance for the adjustment system.

Position them by eye, **photo 2**, evenly spaced across the melamine-faced board, and mark round them. Then mark out the screw hole positions on the board, **photo 3**.

Once one board is marked out, place it over the other board, line up the edges so they're flush and drill directly through the two boards at the same time – this saves both marking and drilling time. Then countersink the screw holes, **photo 4**.

Secure the battens to the boards using screws of between 25 and 38mm in length

at approximately 200mm intervals along the length of the battens. Ensure that the outer battens are set in by about 50mm to allow enough room for the adjustment bolts which will be added later. I used four battens in total for good overall strength.

Fix the battens to the top board, **photo 5**, then fix the melamine-faced board to the opposite edge of the battens, **photo 6**. If your battens are straight and true, the screw holes should line up directly with the battens for easy fixing. Now that the main body of the jig is assembled, **photo 7**, it's time for the all important adjustable support rails to be added.

Cutting the support rail slots

The support rails fit across the width of the jig, and slide up and down its length on adjustable bolts to support the board being thicknessed. Use a router with a 6 to 8mm flute cutter to create two slots for each rail, parallel to the edges of the jig. My 6mm slots were set in 24mm from the edges of the jig and measured 284mm in length. Each slot had a 45mm gap between the end of one and the start of another, **photo 8**.

Fitting the adjustment bolts

When the slots are all cut, it's time for the adjustment bolts to go into position. Add a nut, a spring washer and then an

oversized flat washer (in that order) to a 40mm M6 bolt, then wind the nut down to approximately 10mm above the bolt head. Insert the bolt through one of the slots from underneath the top surface of the jig and attach another oversized flat washer and M6 nut when it comes through the other side. Now lightly glue the second (top) nut to the top face of the oversized washer using a hot-melt glue gun. This makes adjusting the screw threads easier when the jig is in use. Repeat this process for each slot, **photo 9**.

Making the support rails

Plane up a length of 22mm thick hardwood for the support rails, **photo 10**, and cut it into 32mm wide strips. Hard, stable timber such as beech is ideal for this. Cut five lengths to match the width of your jig. Next, mark the centre line of each rail with a marking gauge, **photo 11**, and square a line across each end of the five rails to indicate the positions of the holes into which the bolts will fit, **photo 12**.

Drill a 6mm hole to a depth of 20mm at each marked position, **photo 13**. The holes should be centred to match the positions of the threaded bolts you've already added to the jig slots. Now counterbore each hole with a larger drill bit; the counterbore should be just big enough to house one



1 Cut the four softwood battens to length from 45 x 19mm stock



3 Use the pencil marks to position the screw holes on the board



5 Screw the top board to the battens



2 Aligning the battens by eye and mark their positions lightly in pencil



4 Drill through both boards at the same time and countersink the screw holes



6 Turn the jig over and attach the bottom board



7 The partially assembled jig is now ready for its slots to be cut



8 Use the router to cut a series of slots in the top board. Note the gaps between the slots



9 Fit an M6 bolt plus its various washers and nuts into each slot



10 Plane up a length of 32mm thick hardwood stock for the support rails



11 Mark the centre line on each rail with a marking gauge



12 Square a line across the end of each of the rails to mark the bolt positions



13 Drill a pair of 6mm holes 20mm deep at the marked point in each rail



14 Stick grip tape to the opposite face of each rail and trim it flush with a sharp knife



15 Fit the rails onto the bolt tails in the jig and check that they move freely

of the nuts that are glued to the oversized washers on the top face of the jig.

Stick a length of grip tape or fairly rough sandpaper on the opposite edge of each rail with double-sided tape. Use a trimming knife to cut the material flush from the back, **photo 14**. This will form a grippy surface to hold sawn boards in place on the jig.

Fitting the support rails

Now that the support rails are finished, place them in position over each set of adjustment bolts. With the threads loose, the rails should slide up and down the slots with ease, **photo 15**. Now try placing a rough-sawn board on the jig. Slide the support rails into their most supportive positions and use the bolt threads to lift the rails to meet the board's bottom surface, **photo 16**. When each is set at the correct height, use the second nut (next to the spring washer) to lock the assembly in position – tighten the nut against the underside of the slotted surface for a good secure lock. After repeating the process for all the slots, the jig is set and ready for use.

Using the Jig

Support the jig at the in-feed side of the thicknesser and reposition the board to be planed on it. If necessary, readjust the bolts to level the board on the jig and prevent any



16 Rest a board on the jig and adjust the rails to support it (see panel, right)

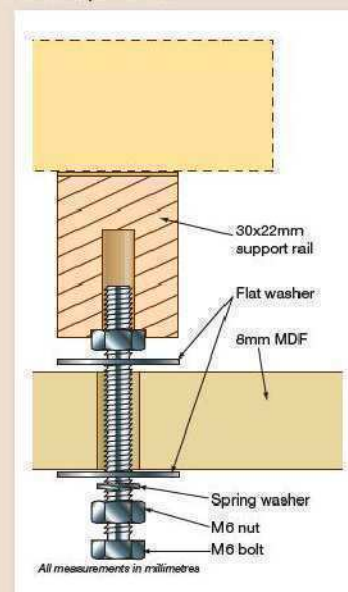
rocking, then start feeding the assembly through the machine.

When taking the jig through the thicknesser, make sure you use plenty of adjustable roller stands on the in-feed and out-feed sides. Together, the jig and the board you're planing can be very heavy. Ensure that there are ample surfaces around you to rest the jig on when transferring it from the out-feed to the in-feed position. I would recommend using at least two roller stands at both ends of the thicknesser.

I've found this jig to be a very useful addition to my workshop kit. It's one of those jigs that really does make a next-to-impossible job possible in a relatively short period of time. The short time needed to make the jig should pay off after just one or two wide board planing jobs. And it only cost a few pounds to make...

ADJUSTING THE JIG

To adjust each rail, slacken off the locking nut and turn the bolt head to raise or lower the rail to the required level. Then tighten the locking nut up against the spring washer to secure the bolt in position.





Chris Child presents a copy of a Victorian footstool that's turned from a single disc of English beech, and features four separate bun feet

He also explains how to sand turned work to a fine finish on the lathe, by using the correct abrasives and the right technique



Turning projects often have unlikely beginnings. Bob Chapman describes how he created a stunning bowl from a rough-looking lump of oak burr



Adding flutes and grooves to small turned work can create a wide range of fancy pieces. Ian Wilkie shows you how to do this using a flexible drive unit and a simple jig



p54



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TURNING

Lathe projects, tips and techniques



TURNING LAMINATED BLOCKS

You can create amazing decorative effects on the lathe by using laminating to create the building blocks. This trinket box was made by Arthur Conway of Queensland, Australia, using a combination of coloured veneers laminated to a centre block of well-seasoned timber for the bowl centre. He first glued five veneers to opposite sides of the core, cut this into a 110mm wide section and added matching layers of veneer to the cut faces to create a complete block. He then trimmed the corners on the bandsaw before starting to turn it into the bowl shape on a screw chuck.

The lid was turned from a composite sandwich, made by gluing together a 110mm square of plain wood, an 85mm square of laminated wood and veneers, and a 38mm square of matching wood for the knob. The finished bowl was hard-waxed with carnauba to bring out the laminate colours and create an attractive semi-gloss finish.

HAVE YOU TRIED...

...SORBY'S PRECISION BORING JIG?

Most indexing on the lathe involves drilling, and a jig is a useful accessory to ensure that the holes are drilled accurately at the positions selected. This Robert Sorby jig consists of a body which houses three bushes, and is available in imperial or metric versions. A screw-in stem is provided to match the diameter of your tool post banjo. The kit comes with three matching brad-point drills. It isn't difficult to make additional bushes out of hardwood if you want to use a drill of a different diameter to those supplied.

It's best to use a cordless drill with this system. When the jig is set up, it's crucial that the centre line of the drill is in line with the centre line of the lathe. Turners Retreat | 013302 744344 | www.turners-retreat.co.uk



PRICE:
£35.25



1 True up the rim of the disc with a bowl gouge, slicing in from each edge in turn



2 Cut the outer perimeter groove with a parting tool and check the depth

Beech footstool

CHRIS CHILD



This copy of a Victorian footstool is turned from a single disc of English beech, and features four separate bun feet. Chris Child explains how to make it.

Most 19th century footstools were made with a frame built up by gluing several hardwood blocks together like bricks to form a ring. This would then be turned to shape on a lathe. The method was obviously a sound one, judging from the number of examples that have survived to this day in excellent condition. The only part that tends to wear out over the years is the tapestry work that forms the cushion, but restoring that is another story!

Starting work

Use a faceplate to mount the disc on the lathe, and set the speed to about 500rpm. True up the rim of the disc with a ½in bowl gouge, **photo 1**. To stop the corners from

being frayed, slice in from each edge in turn. Once you have sliced the rim smooth, use the same technique to flatten off the face of the disc. Seasoned beech is tough and can be quite abrasive, so you may have to re-sharpen your gouge several times to maintain a sweet slicing action.

Forming the recess

I had a ready-made upholstered loose seat I intended to use for the stool, so there was no problem when it came to sizing the recess in the top of the stool. To form the 10mm deep recess, first cut an outer perimeter groove with a parting tool, **photo 2**. Check the extent of the cut with a depth gauge, then start to remove the

SEASONING MATTERS

This footstool differs from its Victorian relatives in being made from a single disc of beech about 300mm across and 80mm thick, so there is no complicated jointmaking to do. The wood must be a well-seasoned piece so it doesn't shrink out of shape after completion.

If you don't have any suitable stock, you could get over the problem by adopting a two-stage approach to making your stool frame. Find a suitably stable but unseasoned piece of wood, and hollow out the disc so that the sides are about 20mm thicker than required for the finished frame. Wrap it in newspaper and store it away to dry. Depending on its original moisture content and the prevailing room temperature, this can take anything up to a year, after which time the blank will be ready to be turned to the finished shape and size.

waste with a bowl gouge, **photo 3**. Then test-fit the loose seat in the recess before starting to shape the sides of the stool, **photo 4**.

Shaping the sides

To form the smooth tapered sides of the stool frame, use the slice cutting technique with the gouge. I used an upright fence made from a piece of plywood cramped to the tool rest to prevent the gouge from slipping at the start of the cut. Once there is support for the bevel of the gouge, you can take quite heavy cuts to remove the waste, **photo 5**, but be prepared for plenty of vibration! When it comes to creating a clean, smooth finish, re-sharpen the gouge and take a much lighter cut with a slower rate of feed.

Forming the moulding

I made the simple round moulding that decorates the lower half of the frame by using a standard $\frac{1}{2}$ in parting tool. First cut

a step in the side of the frame about 25mm up from the bottom edge, by parting into the work in the usual way, **photo 6**. Then, to clean up the corner and improve the finish, adopt a sideways cut by sliding the tool across so that the corner of the cutting edge slices through the surface. Use the same lateral cutting technique when it comes to rounding off the ovolo moulding, **photo 7**. This time, twist the tool in the hand so the corner of the edge is engaged.

Hollowing the underside

To hollow out the underside of the stool frame, form a dovetail recess so you can mount the work in the jaws of an expansion chuck. Take care to hold the dovetail scraper steady when making the dovetail, **photo 8**, so the work runs true on the chuck.

Use the bowl gouge to hollow out the underside, **photo 9**, reducing the thickness of the top of the stool to about 3mm. Check the depth of the hollow against the recess in the top. A thin top should not impair the



4 Test-fit the seat in the recess before starting to shape the stool sides



5 Use a plywood fence to support the gouge as you start to shape the sides



6 Cut a step in the side about 25mm up from the base of the frame



3 Then use the bowl gouge to remove the bulk of the waste from the recess



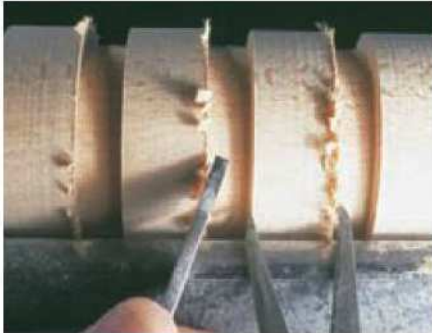
7 Use the same lateral cutting technique to round off the ovolo moulding



8 Take care to hold the dovetail scraper steady when forming the dovetail



9 Use a bowl gouge to hollow out the underside, then check the depth of the recess



10 Block out the shapes for the four bun feet using the parting tool



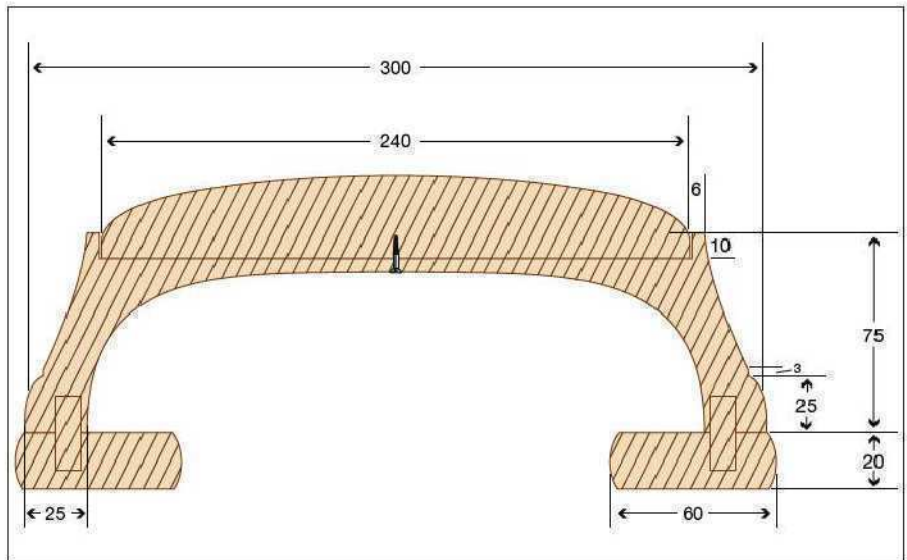
11 Shape the toe of each foot with a rolling and lateral cutting technique



12 Use the lathe as a makeshift drill press to drill the dowel holes in the feet



13 Glue the dowels into the feet, then fix them into matching holes drilled in the stool frame



structural strength of the frame, and will help to lighten the weight of the stool.

While the frame is on the lathe, drill a small hole through the centre to take the screw which holds the loose seat in place. Also mark out and drill the four dowel holes for the feet.

Turning the feet

Turn stock to a cylinder between centres for the four bun feet. Use a pair of odd-leg callipers to mark up each foot to exactly the same size, then block out the shapes using the parting tool, **photo 10**. Shape the round toe using the same tool, by adopting a simple rolling and lateral cutting technique, **photo 11**.

After sanding and polishing the feet, separate them on the bandsaw and drill a hole into the top of each foot to take a

glued dowel. I used the lathe as a makeshift drill press to drill the holes, **photo 12**.

These were drilled off-centre so the feet could be set flush with the outside edge of the stool frame. Glue the dowels into the feet, **photo 13**, then attach them to the stool frame.

Finishing touches

When it comes to sanding the stool, start off with coarse abrasive to remove any tool marks, then go on to use medium and fine grades to remove the marks left by the previous grade.

To finish the stool I simply wiped a coat of shellac polish all over it to seal the wood, and then followed this with some wax applied with a clean cotton cloth and burnished to a soft sheen. Then all that remained was to attach the seat and put my feet up!



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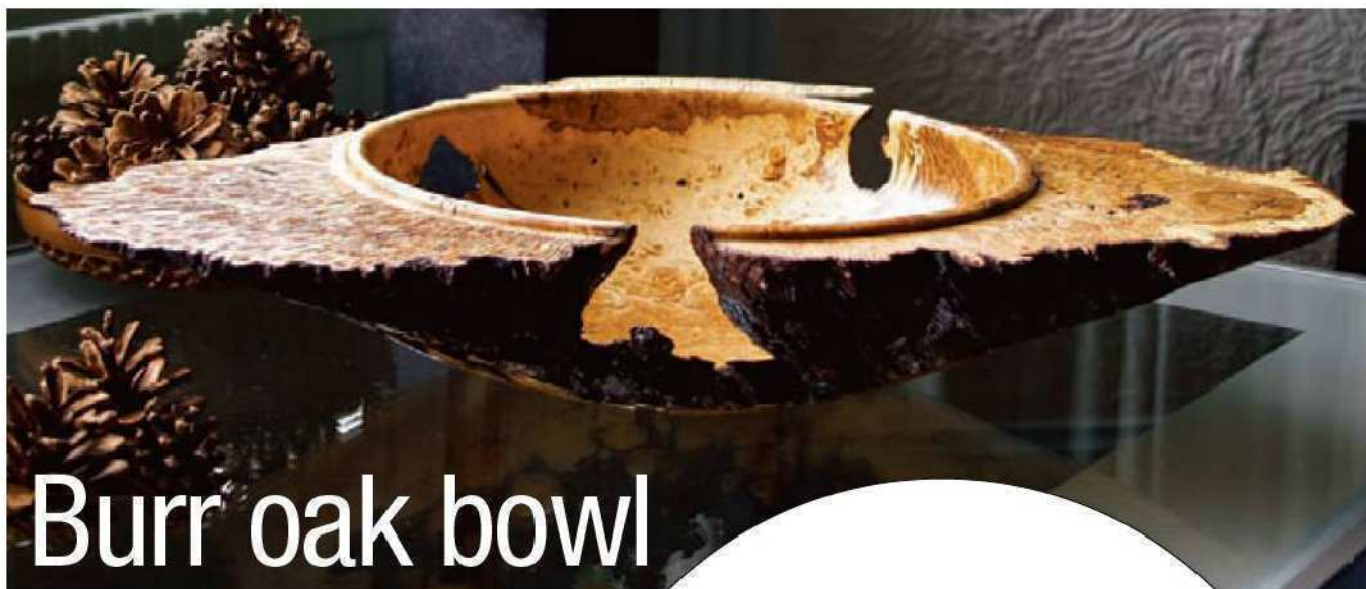


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Burr oak bowl

BOB CHAPMAN



Woodturning projects often have unlikely beginnings.

Bob Chapman created this stunning bowl from a rough-looking lump of oak burr

While looking for something else in the workshop recently, I rediscovered an almost triangular lump of oak burr that I thought might make an interesting bowl. It was roughly 530mm long and 400mm across at the widest point, and about 125mm thickness. So I set about working out how to make the best use of what was a very unpromising specimen.

Design options

There are a number of ways a burr like this can be treated, and I thought it was worth spending a little while considering the design options at my disposal.

The drawing above shows the effect which the shape of the burr would have on bowls of different sizes. The white areas

show the parts of the finished bowl which would be missing owing to the shape of the burr.

My first trial (overleaf) shows a fairly classic bowl design and one which I like, but I was concerned that the triangular shape of the burr would lead to far too much of the finished bowl being missing.

Design 2 shows a similar external shape to the bowl, but with a smaller interior and consequently heavier walls. Most of the interior bowl wall would be retained with this design, and the large flat rim would accommodate the wings of the burr.

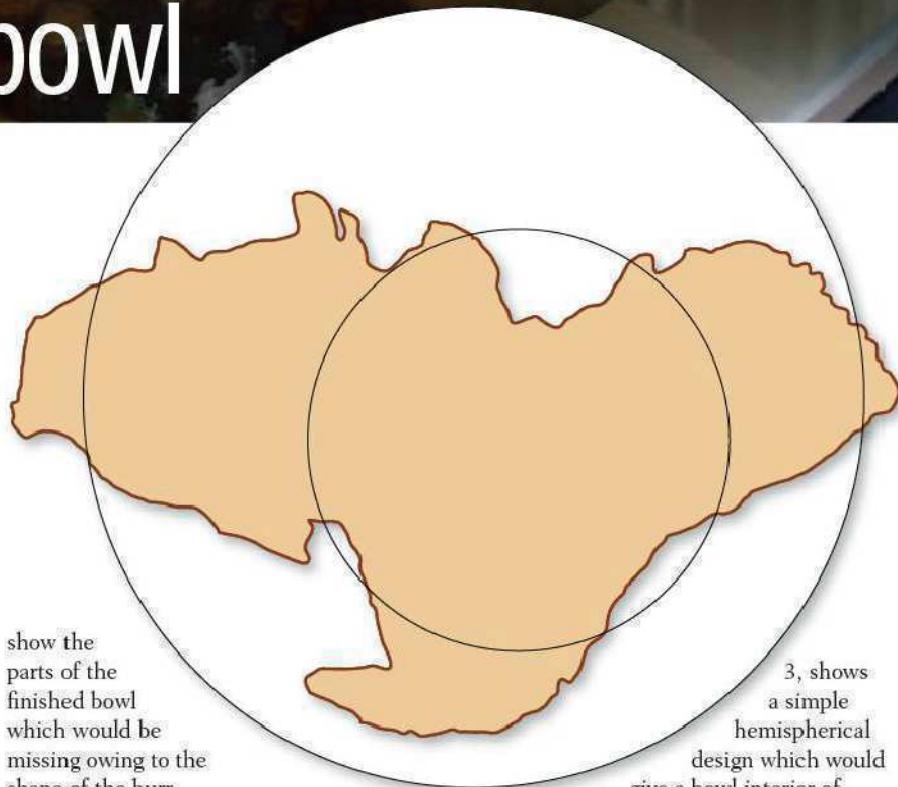
The third option, illustrated in design

3, shows a simple hemispherical design which would give a bowl interior of

roughly the same size as option 2, but with a natural edge. It overcomes the triangular shape problem simply by cutting away the extremities of the burr but would, I think, lose much of its beauty at the same time.

Making a choice

I finally decided to go for the flat-rimmed bowl in design 2, because the greater thickness of the walls would help strengthen it when the inevitable holes appeared. Note also that the bowl shape



1 Prise off any loose bark before you start turning the block



2 Try to get the hole for the chuck perpendicular to the upper surface



3 Balance the workpiece by removing unwanted lumps or adding weights



4 Approach carefully and make the gentlest contact to begin with



5 Finish shaping the outside and form a foot and spigot on it



6 Power-sand the exterior of the bowl with the lathe stationary



10 Then wax and buff it up until it displays a delicate sheen



11 Turn the burr the other way round and true up the front surface



12 Carefully form the rim to mark out the bowl diameter

extends outside the burr slightly. This means that some of the outer surface of the burr will be retained on the underside of the bowl. The thick walls of design 2 allow this, whereas if it were attempted with a thin-walled bowl the walls would end up

with a multitude of small holes and the whole thing might fall apart.

Preparing the burr

The first thing I do with any burr is to prise off the loose bark with a screwdriver,

photo 1. This reveals the true shape of the burr underneath, and also prevents loose bits flying off during the turning.

By a process of trial and error with compasses, I found the approximate centre of the burr and propped it in place on the drill table with its upper surface horizontal. I used a spirit level to check this in two directions at right angles, **photo 2.**

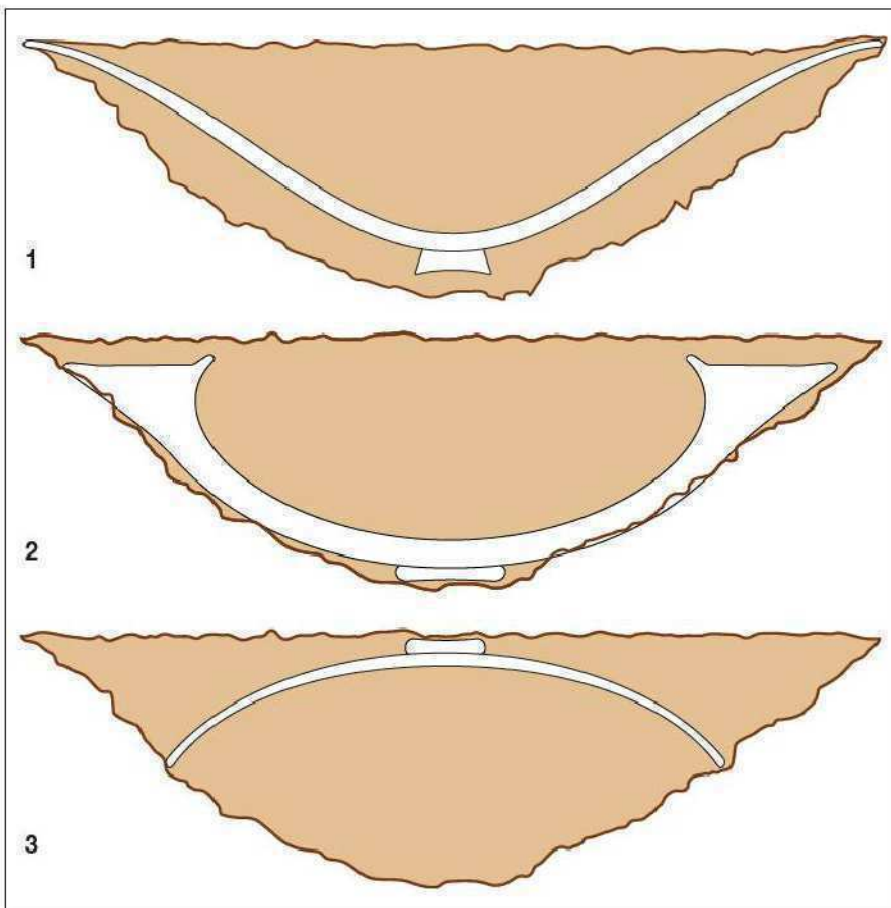
With a burr of this size I wanted it held just right on the screw chuck, and I knew that any errors at this stage would be magnified at the outer edge of the burr. When it was positioned correctly, I drilled an 8mm hole about 25mm deep to take the screw of the screw chuck.

Mounting the burr

The size of the burr meant that it wouldn't rotate over the bed of my lathe, but fortunately it has a swivelling headstock and I could mount the burr that way. Switching on at low speed revealed that the burr was badly out of balance, and before continuing I rectified this by sawing off a largish branch stump at one end, **photo 3.** If this hadn't worked, I'd have screwed on some pieces of scrap lead pipe to balance it up.

Starting turning

With the burr balanced a little better, the speed could be increased and turning started. At this stage much of the burr was just a vague blurred outline, so I had to take a very cautious approach with my tools, **photo 4.** Eventually the outside was shaped and a spigot cut to hold the bowl when reversed later, **photo 5.**





7 Brush the burr surface clean and remove all the debris



8 Paint on a generous coat of sanding sealer and leave it to dry



9 Use wet and dry paper dipped in paste wax to smooth the surface



13 Power-sand the top surfaces of the wings before carving them



14 Hollow out the bowl interior, but take care to avoid the whirling wings



15 Sand down to 400 grit, then seal and polish the interior



16 Reverse the burr onto a vacuum chuck and remove the spigot



17 Finish shaping the foot, then seal and polish it as before

Sanding the outside

Trying to sand a piece like this with the lathe running is fraught with difficulty and danger. I certainly didn't want to put my fingers anywhere near the surface. On the other hand, when power sanding an irregular piece with the lathe running, the sanding pad has a tendency to dip slightly into the hollows. This leads to the removal of more wood from the leading edges when they contact the sanding disc with increased pressure.

The solution was to turn the lathe off and power-sand the workpiece while it was stationary, **photo 6**. Working down through the grits from 120 to 400 gave the freshly cut surface a good finish. To clean up the remaining burr surface I wire-brushed it thoroughly in all directions, **photo 7**.

Finishing the outside

Once the exterior had been cleaned, I brushed a coat of sanding sealer over the

entire surface and left it to dry, **photo 8**. I then smoothed the cut surfaces with a piece of fine wet and dry paper dipped in paste wax, **photo 9**.

I usually use steel wool for this, but you have to be meticulous in removing all the debris when using it on oak, as any residual steel particles will eventually form black stains on the surface. When it was smooth, I buffed the surface to a sheen, **photo 10**.

Tackling the interior

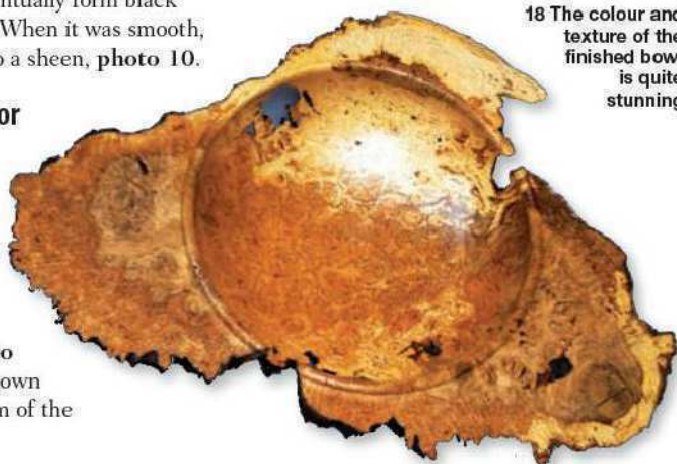
With the outside finished, I turned the burr round and held it in the chuck so I could start to hollow out the bowl section. I skimmed the surface first, **photo 11**, and then took it down slightly to form the rim of the bowl, **photo 12**.

Before continuing to hollow this out, I sanded the wings as before, **photo 13**, and then carved them with the edge of a Dremel cutter to add interest.

I then started hollowing out in earnest, **photo 14**. This was fairly straightforward, although I had to be careful to avoid the wings as they whirled round almost unseen. During hollowing, some areas of burr broke through to produce holes in the sides of the bowl, **photo 15** – an attractive feature.

Finishing the bowl

I sanded, sealed and polished the interior of the bowl as I had the outside. I then reversed it onto a vacuum chuck to remove the spigot, **photo 16**, before decorating and finishing the foot, **photo 17**. The end result was a unique bowl that showed off the colour and texture of the raw material to perfection, **photo 18**.



18 The colour and texture of the finished bowl is quite stunning

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Sanding on the lathe



CHRIS CHILD



Sanding turned work on the lathe gives a fine finish, so long as you use the correct abrasives and the right technique. Chris Child explains how

For most of us, sanding is one of the least pleasurable aspects of lathe work, but we're greatly assisted by the improvement in quality and effectiveness of the abrasives that are available today. Nobody uses the old glasspaper that I had to contend

with when I was at school. Today we have harder wearing and quicker cutting abrasives at our disposal, such as aluminium oxide or silicon carbide, which are coated onto a paper or flexible cloth backing. Grit sizes in these products range from the coarsest 24

grit to the finest 1200 grit, and are made to be anti-clogging and heat-resistant – both important considerations when working on the lathe.

Abrasives for woodturning

Some of the inexpensive paper-backed abrasives dull very quickly when used on turned work. As a result I've taken to using J-Flex aluminium oxide cloth-backed abrasive for almost all my sanding work.

The secret of this long-lasting abrasive is the resin coating, which holds the grit in place even when a heavy sideways force is put upon it. Combined with the hard-wearing cloth backing, which has been made

SAFETY FIRST

Sanding on the lathe produces masses of dust which, if breathed in, can be very damaging to your long-term health. The majority of dust can be sucked away using a drum or bag dust extractor; this will also slow down the general build-up of dust on workshop surfaces. You can even use an old domestic vacuum cleaner, by rigging up the nozzle of the hose close to the source.

However, no dust extraction system will get rid of all the dust, and to be safe you will also need to wear a good dust mask. The type of disposable dust mask I use has a valve at the front to allow exhaled air to pass through without making the body of the mask soggy. It also helps prevent spectacles from steaming up.

For a more effective method of combating the dust problem, invest in one of the battery-powered respirators. These combine complete respiratory protection from dust with shielding your eyes and face from flying wood chips and splinters.





1 Change your abrasive as soon as the cloud of sanding dust disappears



2 Draw the sanding pad up to the rim of the bowl, but not over it



3 Sand the floor of the bowl flat using a small sanding block

very flexible so that it conforms to the most intricate profile, this product is perhaps the ultimate abrasive for general woodturning.

The cloth that I use most of the time is the brown J-Flex. This comes in 1m-long roles with a grit range from 80 to 600, which is ideal for most woodturning needs. J-flex is also available with a grey stearate coating which lubricates the work and minimizes clogging. There is even an abrasive cloth called Blue J-Flex with a self-sharpening ceramic grit, which some woodturners say cuts best of all.

Basic techniques

For general-purpose sanding, tear the abrasive into 150mm pieces and then fold them into three. This creates a handy-sized pad which can be re-folded so that all of the surface area of the abrasive is used.

For most woods, you'll need to start with 80 grit to remove gouge ripples and bruised or broken grain, although when the wood is finely textured it isn't always necessary to start off with such coarse abrasive. With a fine-grained wood like cherry, for instance, I start off with 240 grit and work my way through 320 grit before finishing off with 600 grit. Keep stopping the lathe periodically and dust off the surface so that you can check the progress of the sanding.

Sanding is not just a matter of making the surface smooth, but is also intended to remove any marks made by the tools or by the previous grade of abrasive. It's when sanding with the finer grades that the figure

of the grain begins to appear and the full beauty of the wood is revealed.

Unfortunately, only too often scratch lines and bruised grain show up even more if they aren't removed before the polishing stage. It is quite a routine job to have to go back over your work again with a coarser grit to remove some stubborn blemish which is too deep to remove with the fine or medium grit.

When you are holding the abrasive against the work, make sure that your fingers are trailing with the direction of rotation and not pointing into it. Never bind the abrasive round your fingers or wrap it tightly round the work, in case it snatches out of control.



4 Use a free-wheeling sanding disc that matches the bowl's curvature



5 Sand a straight taper with a wide strip of abrasive paper



6 Use a narrower strip to sand shallow pear-drop curves



7 Wrap the abrasive cloth round a dowel when sanding a deep curve



8 Fold the abrasive round a wedge block to sand a small fillet

Don't be tempted to use any abrasive when it is blunt, as the friction created can often cause the fine end-grain cracking which spoils an otherwise perfect piece of turned work. Watch the stream of dust which should accompany your sanding, **photo 1**, and change your abrasive as soon it disappears to avoid burnishing the wood.

Sanding bowls

For the inside of bowls, make half-size pads which can bend smoothly into the compound curve of the bowl's wall. Hold the pad with the tips of your fingers, remembering to point them in the direction of rotation. Place the abrasive on the centre of the bowl and draw it out up the sides to the lip, **photo 2**, but not over it unless you want a rounded rim.

The two areas inside the bowl where the grain runs against the rotation of the work are often difficult to clean up. This end grain is caused by the wood fibres being bent back on themselves by the edge of the tool when the inside of the bowl is hollowed out. It is much more resistant to sanding than the rest of the inside surface, and you may find that your bowl ends up with uneven wall thicknesses if you simply apply heavy sanding overall. Bruised end grain is worse in some woods than in others, and often there is no remedy but to stop the lathe and sand it away by hand. To flatten off the floor of the bowl, use a small sanding block made of soft wood or cork, **photo 3**.

Disc sanding

There are several sanding disc systems available for woodturners which have interchangeable abrasive discs held on foam-faced arbors by strong Velcro fastenings. When fitted into an electric drill and held against the revolving workpiece, the combined rotations create a powerful scouring action which swiftly cuts away tool marks and smooths out an uneven profile. On bowls they have to be used with care, because it is very easy to create an uneven wall thickness, especially when the coarser grits are used.

Less aggressive systems have the disc fitted into a freely rotating arbor which fits onto an angled handle. The motion of the workpiece itself drives the head round when it is pressed against the workpiece, **photo 4**. These are especially useful on the edge of natural edged bowls, and offer a convenient alternative to power sanding.



9 Keep your fingers flat against the workpiece when sanding in gloves

Sanding spindles

When sanding spindles, start off with the same coarse abrasive to remove the last traces of tool marks, which may include quite heavy gouge ripples on shallow curves and tapers. Fortunately, on side grain these faults will vanish in a second or two with the application of a piece of fresh abrasive, **photo 5**.

If your spindle contains steep concave hollows and convex curves which expose end-grain surfaces, these are much more difficult to clean up, **photo 6**. They should have been sliced cleanly with the tools in the first place, because no amount of sanding will remove such faults as side gashes, torn grain or uneven radiuses. Continuous heavy sanding on these end-grain areas is almost as likely to cause added faults such as friction splits, especially if the abrasive is allowed to become blunt.

Preserving details

The principle of maintaining crisp corners and sharp detail is just as applicable to moulded spindle work as it is to the rim of bowls. I avoid sanding any of the fine beads and fillets until the fine abrasives are used. I roll the cloth around a piece of dowel or a conveniently sized tool handle to get into tight concave curves, **photo 7**, and use sharp wedge-shaped blocks to clean up the surfaces of the fillets, **photo 8**.

Woods such as elm can be finished off with 240 grit, but for the finer grained timbers a light rub with 350 or 400 grit is required. There are some exotic rosewoods which will need even finer grades of abrasive to be certain of obtaining a finish, where the only marks visible on the work are the natural grain figuring of the timber.

Sanding in gloves

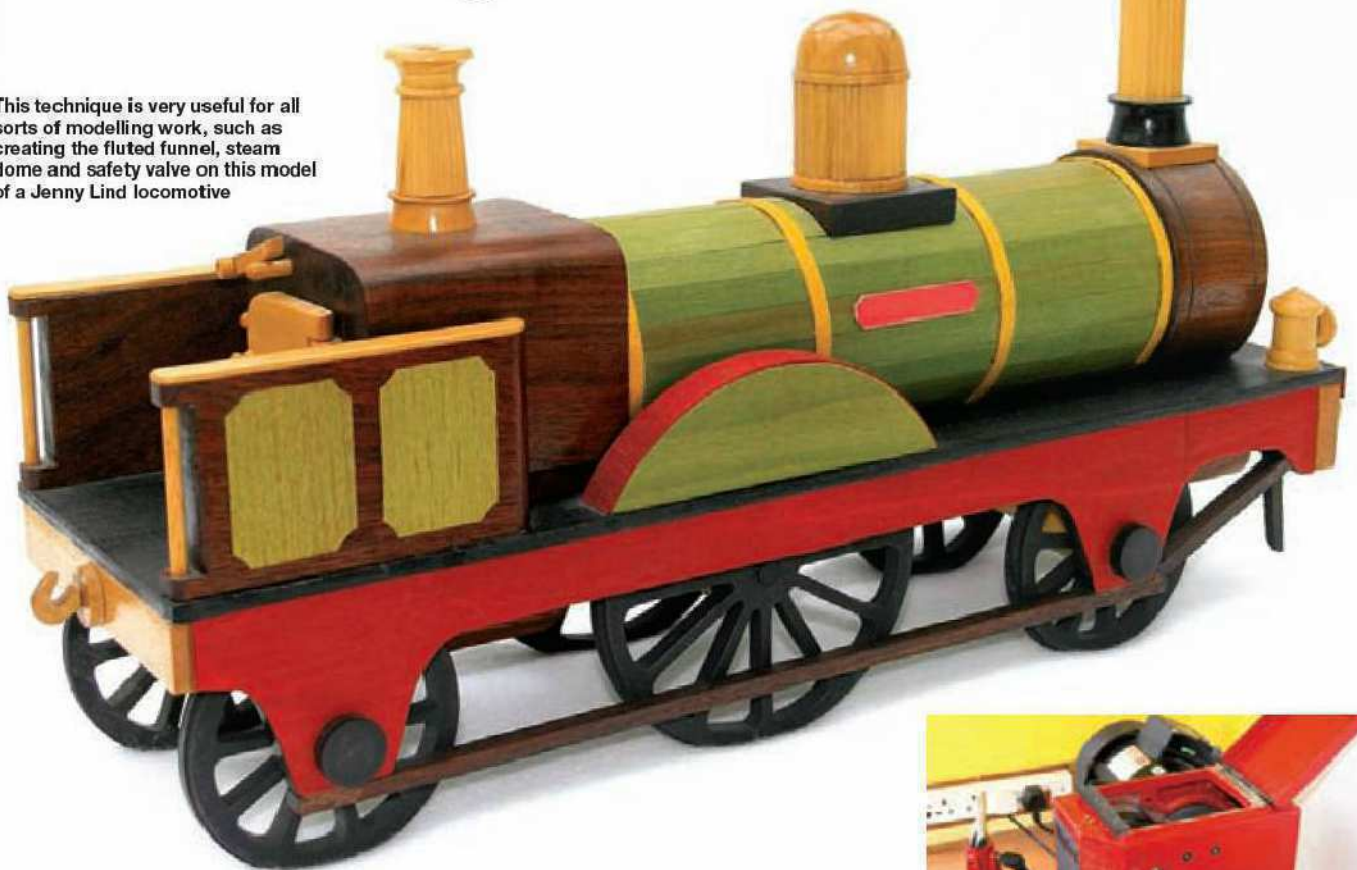
Some woodturners frown on wearing gloves because they fear that they may get caught up on the revolving workpiece. But so long as you take sensible precautions, I would recommend them as they make sanding much less uncomfortable. The gloves must be close-fitting so that they can't be pulled off, and stiff enough not to tangle up on the work. The project must be free from holes in which the glove might get caught, and free from projections on which the glove might get hooked. Always hold your hand in an open grip, keeping your fingers flat against the workpiece, **photo 9**. Discard any glove as soon as it starts to wear out.

The wax method

Lastly, there is a method of sanding which reduces the dust problem to a minimum. It makes use of one of the clear toluene-free quick-drying waxes. Simply coat the work all over with wax and sand it down in the normal way. The wax lubricates, traps the dust and seals the wood ready for polishing, all at the same time.

Flutes & grooves

This technique is very useful for all sorts of modelling work, such as creating the fluted funnel, steam dome and safety valve on this model of a Jenny Lind locomotive



IAN WILKIE



Adding flutes and grooves to small turned work can

create a wide range of fancy pieces. Ian Wilkie explains how to do this using a flexible drive unit and a simple jig

To decorate a turned chair or table leg with flutes, the woodturner may well use a full-sized router and a jig. However, it's possible to decorate shorter lengths and smaller diameters using a flexible drive unit and a simple home-made jig. Here's how I went about it.

Most routing jigs using a full-sized router are clamped to the bed of the lathe, but in this case the jig is held in the lathe's toolrest holder. This has the advantage that it's very quick and easy to set up for axial through to radial routing, simply by adjusting the angle of the guide. You can see exactly what you're doing, and you have full control. The jig is easy to make, but it must be constructed accurately. This is a simple but precise technique which the woodturner can develop in his own way.

The technique described is suitable for a lathe with built-in indexing, such as the Myford Mystro, **photo 1**, or one with an indexed chuck which can be locked with a bar. Indexing and routing on the lathe are all carried out with the lathe switched OFF!

Flexible drive units

My jig is designed to be used with a flexible drive unit. I have tried three different systems – see panel for details – and they all perform well. Each system comprises



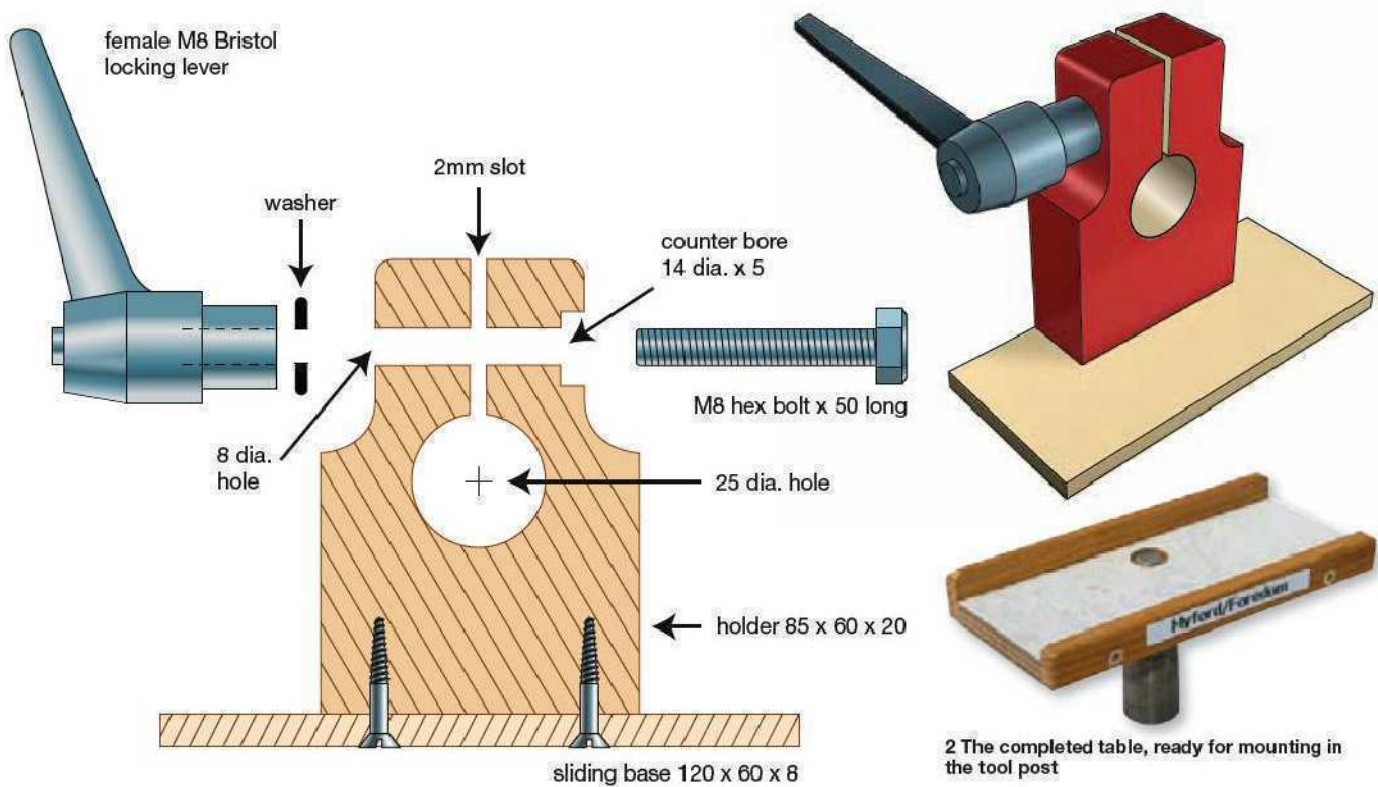
1 The Myford Mystro with the cover hinged back to set the indexing pin

FLEXIBLE DRIVE SYSTEMS

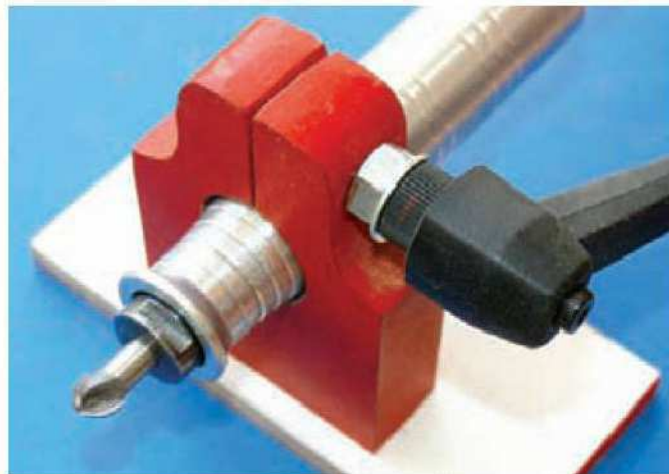
The three systems I've tried out are:

- The Axminster heavy-duty flexible drive unit and handpiece; £82.55
Axminster Power Tool Centre
0800 371822
www.axminster.co.uk
- The Flexi-Rota flexible shaft power tool kit (RC330); £170.20
- The Foredom wood carving kit (FD2297); £254.57
- Both from **Shesto Ltd**
0208 451 6188
www.shesto.com





2 The completed table, ready for mounting in the tool post



3 The Foredom handpiece firmly held in the beech block on the holder



4 The table and holder set up on the lathe, ready for use

a motor which drives a flexible shaft. A footswitch controls the variable speed and the on/off switch. A handpiece clicks into the end of the flexible shaft and takes a range of collets.

The handpieces for the three systems appear almost identical, and for the routing jig you need the 25mm diameter standard handpiece with a 1/4in inch collet. The motor is hung on a hook above the work area. Accessory stands are available, but it can be cheaper to make your own device to suit your workshop. I use a steel bird feeder pole which has a hook at the top and is held to the bench surface with a cramp.

Using the Foredom kit

When I originally tested the Foredom wood carving kit, I was so impressed that I purchased the test model. The machine is made for industrial use; it has a very efficient variable speed operated with a footswitch, which gives good torque

throughout the entire speed range. The steel collets are made for a long life.

I'm not a wood carver, but I found the machine to be very versatile, and it obviously has many other woodworking uses. I also use it for sanding with a sanding disc or a small drum sander when I'm woodturning. I've positioned the hanging bracket close to the lathe headstock so that it's always ready for use.

When I wanted to flute some parts on the model of a Jenny Lind engine I was making (see page 57), I devised a jig to hold the handpiece and a router cutter. I then went on to improve and modify the jig so that I could use it for decorating many other turned items. The Foredom is undoubtedly expensive, but it's a top-class product and is a pleasure to use.

Router cutters

When I first tried to create flutes with this technique, I used miniature cutters with

1/8in shanks. However, these proved to be very disappointing because they weren't sufficiently rigid and their quality was poor. I then went on to try a 1/4in-shanked twin-flute TCT 6mm radius cutter from Trend, and the results were excellent, with a clean vibration-free cut. The 3.2, 4.8 and 6.4mm sizes cost in the region of £20 each. A similar product from Axminster is the CMT round-nose cutter. For grooving, you'll need a 3mm twin-flute straight cutter.

As for general advice, keep the cutter size down and reduce the depth of cut to the minimum to avoid overloading the flexible shaft. As with conventional routing, it's best to take several shallow cuts rather than one deep one. Above all, it's essential that the cutter is really sharp!

Jig design

I then spent some time thinking about the design criteria that a fluting and grooving jig would have to satisfy to perform well.

Here's what I came up with.

- The stem should be metal and of the correct diameter to fit the toolrest holder
- The table should be square to the stem
- The handpiece must be clamped firmly in a holder
- The centre line of the cutter should correspond with the centre line of the lathe
- The slide must run smoothly between the guides on the table without any restriction
- It should be easy to adjust the position of the table for axial through to radial routing.

Materials for the jig

The dimensions for the various parts will depend on the size of jig you wish to make and your particular lathe. As mentioned, I made mine to fit a Myford Mystro lathe. Most of the parts can be sourced from your offcuts box.

- **The table:** a 120 x 60mm piece of 12mm thick plywood
- **The guides:** 120mm long hardwood strip or aluminium angle
- **The stem:** from Robert Sorby or Craft Supplies, to suit the lathe toolrest
- **The sliding base:** a 120 x 60mm piece of 9mm thick plywood
- **The holder:** an 85 x 60 x 20mm beech block
- **The lock:** a 50mm M8 hex bolt, washer and matching nut or a female M8 Bristol locking lever (from Trend).

Making the table

The jig is custom-built for my Myford lathe. It comprises two main parts: the table (photo 2), and the sliding holder (fig 1 on page 58). The metal stem under the table must be the correct diameter for your particular lathe. Sorby and Craft Supplies make stems in a range of sizes; you may find you have to shorten the stem with a hacksaw if it's too long.

Although a wooden stem could be used, the locking screw in the side of the tool post holder would quickly damage the surface, so this isn't really a satisfactory solution. The stems have a screwed spigot on one end which can be glued into a



5 Making a fluting cut with the indexing pin set in the first position



6 Reversing the direction of cut to clean up the flute



7 After working all the way round the cylinder, the flutes are complete

drilled hole on the underside of the table. It is important that the stem doesn't come right through the table, as otherwise it will impede the sliding holder.

Making the holder

The handpiece holder consists of a rectangular base with an upright beech



8 The cylinder is hollowed out and a top and bottom are added to make a pencil pot

block that's countersunk, screwed and glued to the surface. The base needs to be cut very accurately so that it slides between the guides on the table.

Before drilling the hole for the handpiece in the block, set the table up in the tool post, slide the holder in position and press the block against a centre held in



9 Cutting short flutes cut around the rim of a turned knob



10 Angle the table as required to cut the flutes on the rim of a dish.



11 The completed dish, ready for its final sanding and finishing



12 You can use the same technique to flute a box on the lid and sides...



13 ...before adding some turned detail and then parting off the lid



14 Decorative fluting applied to the body of some lace bobbins



15 Strips of mahogany glued into square grooves cut in a cylinder



16 Planing off the surplus mahogany flush with the cylinder to create an inlay



17 The cylinder turned and polished ready for hollowing out



18 With a turned top and base added, the result makes an attractive flower vase

the headstock or tailstock to mark the exact centre of the hole required for the handpiece.

Drill a hole with a diameter to correspond with the diameter of the handpiece you're going to use; in my case this was 25mm. This is best done with a saw-tooth Forstner bit in a bench drill, with the wood held in a machine vice. Cut a 2mm wide slot in the top of the holder and drill a hole through the side to take an M8 bolt. Counterbore the hole to take the hexagonal head of the bolt, and glue it in place with Araldite so that it can't rotate. When this is tightened onto a nut or a Bristol-type lever, the hole contracts to give a firm grip on the handpiece, **photo 3**. All that remains is to set up the jig in the tool post, ready for use, **photo 4**.

Using the Jig

This parallel spindle for a pencil pot was turned between centres, and the lathe was switched off. I then positioned the jig parallel to the spindle, with a 6.4mm radius cutter in the handpiece, **photo 5**.

I set the index pin at the first position and cut the first flute from the tailstock end towards the headstock, steering the holder smoothly along the table to give a shallow cut. I then reversed the holder back towards the tailstock to tidy up the cut, **photo 6**.

I set the index pin for the second position to cut the next flute, and carried on in this way to add the decoration all round the cylinder, **photo 7**. The cylinder was then drilled out and a top and bottom were turned separately to act as a stop to the fluting, **photo 8**.

Variations on a theme

You can use the same method to cut shorter flutes round the rim of a turned knob, **photo 9**. Where the surface you want to work is angled to the axis of the piece, as on the wide sloping rim of the small dish shown in **photo 10**, position the jig parallel with the rim to cut the flutes, **photo 11**. To flute a long tapered spindle, set the table so it can move parallel with the tapered surface of the work.

You can combine these two techniques to apply fluting to the face of a box lid and to the cylindrical sides of the box on which it fits, **photo 12**, before adding further standard turned details and parting off the lid, **photo 13**.

The actual body of a lace bobbin has no function, and is usually decorated in some way. The two examples shown (**photo 14**) were fluted using a 3.2mm cutter. Very shallow cuts need to be taken with a relatively slim workpiece like this, but the overall effect is very pleasing.

Grooves for decoration

You can also inlay contrasting wood into grooves cut with this technique. I cut a series of grooves around the circumference of a cylinder using a 3mm twin-flute straight cutter. I then glued in thin strips of prepared mahogany, **photo 15**, and carefully planed away the excess wood, **photo 16**, before putting the work back on the lathe to be turned and polished, **photo 17**. I then drilled out the centre and turned a separate top and bottom to complete the vase, **photo 18**.



This month's Giant Test features four mid-price jointers (also known in the trade as surface planers), costing from £122 to £155



Taylor's Testbench looks at a rebate plane, a delta sander, the Ryobi One+ system, some wood bits, two bench planes, a circular saw and some trestles

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- The Miller dowel system
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JCB DIGS DEEP

The original JCB backhoe loader is instantly recognizable the world over, with its distinctive yellow livery, and has been an indispensable tool in the construction industry for over 50 years. JCB power tools are a little younger, but they're still yellow and tough. I've been testing a couple of their drills to see if they live up to the family name.

The **HD1010 mains drill** (priced at around £30) is no exception. Rated at a mighty 1100W, it's clearly intended for heavy-duty work. It has a plastic body, with an alloy casting for the gearbox housing. The rear of the handle has a soft-grip insert, and the trigger controls the speed from 0 to 1400rpm. It has a 13mm keyed chuck, and maximum drilling capacities are 13mm in steel, 16mm in masonry and 25mm in wood, although I found it could drive a 32mm wood bit quite comfortably. There's a removable side handle incorporating a depth stop. The collar is a standard 43mm in diameter, so the drill can be mounted in a drill stand for repetitive work.

The **CHD21VC cordless drill** (below) has an 18V battery, with two mechanical speed settings giving speed ranges of 0-400 and 0-1100rpm.

There are 20 torque settings, plus one for drilling and one for hammer action. Drilling capacities are 10mm in steel and masonry, and 25mm in wood.

The gear change button for reverse action is on top of the drill body. A couple of double-ended screwdriver bits clip into the side of the body, which also incorporates a spirit level and a useful battery level indicator above the handle. The drill, charger and spare battery are housed in a plastic kit box, which also incorporates some useful storage space for screws, wallplugs and the like. The battery takes an hour to charge. Expect to pay around £80.

In use, both drills lived up to their name; it's difficult to fault them, and they certainly represent excellent value for money.

JCB Power Tools | 0845 602 1381 | www.jcbshop.com

Tested by Gordon Warr



GIANT TEST

Prices quoted are target prices. Always shop around, as there are often bargains to be had

SETTING THE KNIVES

When changing knives, loosen the clamp screws and carefully slide the knives out. Be careful not to cut yourself as they will still be sharp. If necessary remove the clamping screws and the clamping bar and clean off any accumulated dirt and resin.

Replace the blades and clamp them loosely in position. Take a block of planed timber approximately 100 to 150 mm long. Make a vertical pencil mark about 5mm long three quarters of the way along one edge, then make a second vertical mark exactly 4 mm behind it. This is your knife setting block.

To use it, turn the cutterblock so that both the knives are below the table, and stand the setting block on the out-feed table with the first mark exactly in line with the table edge. Now turn the cutterblock by hand. As the knife comes round, the setting block should be lifted a little, moved along the table and dropped so that the second mark is in line with the edge. If the block does not move the full distance, the knife is too low, if the block moves too far, then the knife is too high.

Adjust the knives by loosening the clamp screws, then use the adjusting screws at either end of the knife to set the correct height. Repeat the process for each knife, and remember to check each end with the setting block so that the knives are evenly set along their length.



Loosen the knife clamping screws



Set the knife adjusting screw



Line up the first mark on the table edge



The block has moved forward the correct amount

Jointers

ANDY STANDING



Need to do some surface smoothing on a scale that hand-held tools can't cope with? What you need is a jointer, also known as a surface planer. Andy Standing tries out four contenders for your workshop

Accurate timber preparation is vital to successful woodworking. But after your wood has been roughly sawn to size, what's the best way to smooth the surface? Traditionally, hand planes would be used, but planing a large amount of timber by hand and producing consistently accurate pieces is a tiring and exacting task.

Realistically it makes more sense to use a machine. There are still some hand-held choices though – a powered planer, for example. These are hand-held power tools with a small rotating cutterblock

that's set horizontally between a pair of flat sole plates. The depth of cut can be adjusted and it's possible to achieve a good-quality finish on most timbers. As they are hand-held, their width of cut is obviously limited; their typical capacity is 82mm. Generally these machines are popular with carpenters and joiners working on site, and are particularly useful for such jobs as hanging doors.

Workshop options

In the workshop there are further choices. Stationary

Continued on page 75



AXMINSTER WP150

The Axminster is a smart and well-finished machine. It has a white ABS base housing the NVR power switch, and the surfacing tables are cast iron. These are beautifully finished with a silky smooth surface, and an easy depth of cut adjustment is mounted underneath the in-feed table complete, with a clearly marked scale. Dust extraction is dealt with via an outlet on the rear which can be connected to a workshop vacuum. Motor power is well matched to the machine size, and it runs smoothly

any without too much noise, even when dust extraction is connected.

The large fence is particularly good, with an easy adjustment system and stops at 90° and 45° to allow for rapid adjustment, and there is also an alloy bridge



The table adjuster and setting scale



The fence is quick to adjust...

guard. The cutterblock houses a pair of re-sharpenable HSS knives, and spare sets are available. Knife setting is straightforward, with positive clamping screws and accessible adjusters. The bridge guard is supported by a solid adjustable arm and provides good protection. A pair of pushblocks are also supplied for safe planing of thin stock.

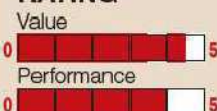
In use the Axminster is extremely impressive. The smooth tables provide an excellent working surface and the overall finish on the workpiece is first class.



...and can be tilted easily to 45°

PRICE: £152.75

RATING



PROS

- Excellent finish, easy fence adjustment and knife setting

CONS

- None

SPEC SHEET

Power	1100W
Max depth of cut	3mm
Table width	150mm
Table length	720mm
Weight	23kg

FURTHER INFO

Axminster

0800 371822

www.axminster.co.uk



The
Woodworker
BEST ON TEST

SIP JOINTER PLANER

The SIP is made almost entirely from cast iron and weighs in at a hefty 35 kg, so get help lifting it.

Both the fence and tables are made from heavily braced cast iron. The overall finish is good, and the fence has a substantial adjustment mechanism that allows it to tilt and slide across the table. At 580mm long and 110mm high it also provides good support for larger workpieces.

The depth of cut is set using a knob underneath the in-feed table. A scale is not fitted, so you must use a straight edge and a steel rule to check

the setting. The cutterblock contains a pair of knives which are simple to adjust, using the Allen key supplied.

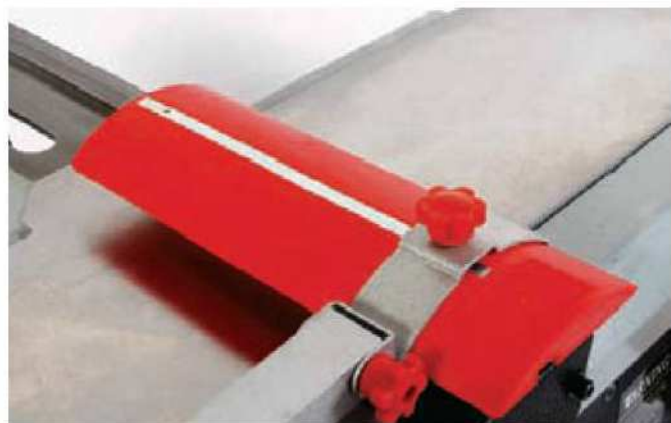
Planers produce a lot of mess, so good dust extraction is vital. The SIP offers two options. The machine has a fan built into the casing which

actually blows the chippings out of the exhaust port, and a filter bag is supplied. Alternatively, the machine can be connected to an extractor.

In use the SIP is an impressive machine. Because of its heavyweight construction it feels really solid and secure. The fence locks rigidly in place without any hint of play and the bridge guard is easily adjusted and effective. The motor is fairly noisy, but it provides adequate power. The quality of finish is extremely good both on hardwoods and softwoods.



Setting the depth of cut manually



The bridge guard gives good protection



The fence's substantial adjustment mechanism

PRICE: £153

RATING

Value



Performance



PROS

- Rigid fence, excellent dust extraction options

CONS

- Fairly heavy, manual depth-of-cut setting required

SPEC SHEET

Power	1100W
Max depth of cut	3mm
Table width	155mm
Table length	730mm
Weight	35kg

FURTHER INFO

SIP

01509 500359

www.sip-group.com



REXON J1550BQ

The Rexion is an elegant machine with its long cast tables and curving grey ABS base. There is a large safety NVR switch on the front panel and a simple adjusting knob under the in-feed table for setting the depth of cut. A clearly marked scale is fitted to the edge of the table. The bridge guard is alloy and is supported on an adjustable arm.

A large alloy fence is mounted on an adjustable bracket and this is well-designed, supportive and straightforward to adjust. On the rear panel is the

dust extraction outlet which will connect directly to a standard sized 56mm workshop dust extractor hose. The cutterblock is 48mm in diameter and is fitted with a pair of double-sided disposable knives. A blade-

The adjustable bridge guard



The clearly-marked table adjusting scale



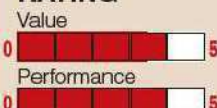
changing wrench is included.

Rexion always seems to add small design features to make the owner's life easier. A pair of push blocks is supplied, as with the others on test here; however, the Rexion has a holder on the rear panel to store them. There is also a storage slot for the blade-changing wrench.

In use the Rexion runs well. The motor feels powerful and is not too noisy. The fence is secure and the tables are smooth and the overall finish is faultless. This is an easy machine to use and it produces excellent results.

PRICE: £154.99

RATING



PROS

- Faultless finish, long tables, large fence
- Storage for push blocks and blade-changing wrench

CONS

- None

SPEC SHEET

Power	1150W
Max depth of cut	3mm
Table width	155mm
Table length	800mm
Weight	26kg

FURTHER INFO

Rexion

01709 876611
www.rexon.co.uk



On-board tool storage is a useful bonus



DRAPER BPL155V

The Draper is an unusual machine with some useful features. It is the lightest machine here, and has an alloy in-feed table and a small alloy fence. The main body is heavy ABS and the out-feed table has a steel upper surface. The motor is fitted with a variable speed control giving a range from 8000 to 15500rpm.

The fence is particularly solid. Although it's fairly small, it has a pair of substantial support brackets mounted on each end with a steel bar running through them. It can be tilted to 45°, though

there is no setting scale, and once locked in position, it is absolutely rock solid.

The in-feed table has an adjusting knob underneath for setting the depth of cut, and there's a small scale on the edge of the table. The pointer on the table is very tiny and



1 The variable speed control knob

difficult to see, though this can be improved with a fine marker pen.

In use the Draper was a little disappointing. Even though it has the most highly rated motor here, it felt underpowered. The instructions suggest that small sections of softwood may be planed at low speed, but this caused the motor to slow considerably under load. It runs best at full speed and that's really where it needs to be set. Unfortunately when connected to a dust extractor, the noise is deafening – ear defenders are a must.

PRICE: £141.29

RATING

Value



Performance



PROS

- Lightweight, variable speed control, solid fence

CONS

- Noisy, feels underpowered, tiny depth-of-cut pointer

SPEC SHEET

Power	1260W
Max depth of cut	2.5mm
Table width	155mm
Table length	690mm
Weight	13kg

FURTHER INFO

Draper

02380 266355

www.draper.co.uk



3 The fence support mechanism



2 The steel-surfaced out-feed table

SAFETY

The jointer has the potential to inflict serious injury on the unwary user. Never use the machine without the guards in place. Make sure your hands are never in line with the cutters as the timber passes over them. The correct surfacing method is first to set the depth of cut on the in-feed table; this should usually be about 1.5mm.

machinery is normally used for planing sawn timber. Surface and thickness planing are often undertaken by the same machine – a planer thicknesser, which is a combination machine that can be easily switched between the two functions.

An alternative is to use separate machines to carry out the two functions, which is often the case in professional workshops. A jointer or surface planer is used to create an accurate face and edge, and a thickness planer is then used to plane the other two sides using the first two as a reference.

A choice of sizes

Jointers are available in a range of sizes, from large professional versions to smaller models more suited to home use. In this test we're featuring machines that are compact enough to find a space in even the most crowded workshop. Bear in mind, when considering buying a jointer, that these are single-use machines. They are capable of surface planing only. To produce parallel-sided workpieces to a given thickness, you will also need to buy a thickness planer.

How jointers work

Jointers are effectively a larger version of the hand-held planer. They have a pair of tables, the in-feed and the

out-feed, with a revolving cutterblock set between them. The height of the in-feed table can be adjusted up or down in relation to the cutterblock. This allows you to choose the amount of timber that's removed in each pass. An adjustable fence is fitted above the tables, so you can choose the angle at which the adjacent faces meet, which is usually set to 90°. The cylindrical cutterblock has two or more removable knives. On most machines these can be resharpened, though some use disposable knives.

Setting up the jointer

You won't achieve accurate results unless the knives are correctly set in relation to the out-feed table. If the knives are set too high, you will notice that as the rear of the workpiece passes over the cutterblock, a small step will be left on the very end. If the knives are set too low, you will invariably start producing tapered workpieces as the cutters fail to make contact with the rear of the workpiece.

Using the jointer

Before planing any piece of timber (see right), look carefully at the grain direction. Always try to plane with the grain sloping away from the cutters, as this reduces the possibility of the grain tearing out and spoiling the finish. On some timbers this is inevitable, as often the grain can be wavy or interlocked and this makes a good finish difficult to achieve. The best thing to do is reduce the depth of cut to a bare minimum, and to use newly sharpened knives.

Jointers produce a lot of mess. It isn't practical to use them without some means of dust extraction connected, as the machine will soon become clogged with chippings and your workshop will quickly fill with sawdust. Be aware that when a powerful extractor is connected to a jointer, the noise level can rise significantly as the air is drawn over the spinning cutterblock.



1 Start the machine and feed the timber slowly under the bridge guard and over the cutters



2 Continue to feed the timber through the machine and onto the out-feed table with steady forward hand pressure



3 Transfer your front hand onto the workpiece on the out-feed table. Hold it down securely to ensure accurate planing. Continue to push the workpiece from the rear, but don't push it down onto the in-feed table



4 Finish with both hands on the out-feed table. Never let your rear hand get too close to the cutterblock

WV VERDICT

A good jointer is certainly a worthwhile addition to your workshop, and these machines provide useful performance in a convenient package. The **SIP** stands out as the best of the bunch for its rugged construction, innovative dust extraction, and good performance. However, all that cast iron does make it very heavy to move around.

For those seeking a lighter solution, the **Rexon** will not disappoint, and with its long tables and thoughtful design it is a very user-friendly machine. For those on a tighter budget, the **Axminster** provides solid performance at an unbeatable price. Finally **Draper** deserves a mention. Although it's very noisy, it does have a good fence and you may find a use for that variable speed.

ON TEST



Using Miller dowels

IAN TAYLOR



Ian Taylor tries out a new dowel-jointing system that attempts to overcome the drawbacks involved in using ordinary cylindrical dowels



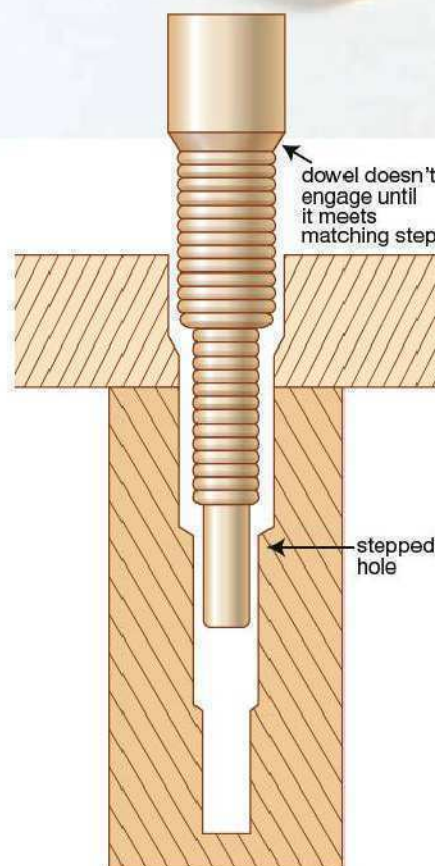
1 The dowels are available in three different sizes and four different woods

Conventional dowels have a number of drawbacks. They can be difficult to drive home because the glue begins to grab very quickly. They act like pistons, compressing air and glue in the hole, which can make them difficult to drive home and can also split the timber. Both effects limit the useful length of the dowels – most commercially available dowels are no more than 40mm long. And the standard dowels on the market are bland in appearance and hardly decorative, especially since their moulded serrations to allow glue to escape can show on the surface. All these downsides are avoided by the Miller dowel system.

How the dowels work

The Miller dowel has four sections of differing diameter, **photo 1**. The widest segment is plain and acts as an accurate countersunk plug for the dowel hole. The two central sections are ribbed to provide channels for excess glue to escape. The plain narrow tip provides a pilot to guide

2 The stepped drill bit makes a hole that matches the dowel geometry precisely



the dowel home in its pre-drilled hole.

The dowels are designed to work in conjunction with their matching Miller drill bits, **photo 2**. These cut stepped holes that match the dowel geometry exactly. Because each step of the dowel doesn't engage tightly until it reaches the matching bore diameter in the hole, it is in effect like having four separate dowels in one. Consequently, the dowels are longer (and





3 I found it easiest to clamp the joint and drill the holes for the central dowels first



4 After inserting these dowels, I drilled the outer holes and completed the joint



5 Once the glue has set, trim the dowels flush with the surface using a fine saw



6 Sand the trimmed dowels flush and apply the surface finish



7 You can use different woods to make the construction a design feature

PACK PRICES

Starter kits containing 50 birch dowels and a matching drill bit cost from £12.55 to £17.54, according to size. Additional dowel packs cost from £7.50 to £19.95, according to size and timber type. Small dowels come in packs of 50, medium and large ones in packs of 40. Birch dowels are the cheapest, and walnut the most expensive.

stronger) than their conventional cousins. They come in three sizes: mini (1½ x ¼in), standard (2¾ x 7/16in) and large (3½ x ½in).

Clever clamping

Since, by design, the holes in the pieces being joined have to be drilled at the same time, you will need to be ingenious in arranging a clamping set-up to hold everything exactly in place.

In my experiments with the system, I assembled simple butt joints, each pinned with four or five dowels. I found that the best method was to clamp the pieces, drill the central dowel holes, **photo 3**, insert the dowels and drive them home. Then, with the joint solidly pinned, I could remove the clamps, drill the outer dowel

holes, **photo 4**, and fit the remaining dowels.

This process was fairly straightforward, but it was on small demonstration piece. With a bigger piece, you may need to plan a staged assembly. Careful design of the joint will also help. For example, housing butt joints in a routed channel will make positioning and squaring up the pieces easier while you drill the holes and fit the dowels.

Gluing and trimming

The recommended gluing approach is to smear glue round the milled sections before driving the dowel home. After the glue has set, you can trim off the excess timber with a low-set saw, **photo 5**, and then plane or sand the surface flat if you want a flush surface, **photo 6**, before finishing in the usual way. But the system is very versatile. You could leave the plugs standing proud, and if you don't want to use the full length of the dowel you don't need to. The depth of the hole you drill will define the length of dowel insertion. Simply cut off the excess, as needed.

Match or contrast

The other feature of the system is that dowels are available in several different timbers, offering design options that don't exist with normal shop-bought dowels. The dowels provided in the starter packs are birch. Other more

decorative options are cherry, oak and walnut. By using a contrasting timber for your dowel, you can make the construction method a design feature, using the plug head as a visible highlight, **photo 7**. But you need to be aware that because the end-grain of the dowel shows, if the surface timber is orientated long-grain you will not get an invisible plug, even if the timbers match. So this system isn't a substitute for the standard plug cutters which allow you to make virtually invisible plugs from matching timber.

WV VERDICT

Although they do their job extremely well, I wouldn't use Miller dowels for standard constructional dowelling. They're too specialised and expensive for that. But if you want to make your joinery method a design feature, then you could consider these as an interesting option. The system is imported from the USA and distributed in the UK by Brimarc. Their website (see below) has a couple of simple dowelling projects, downloadable as PDF files, to get you started.

FURTHER INFO

Brimarc (for stockists)

0845 330 9100

www.brimarc.co.uk

PRICE: £99.99

RATING

Value 0 

Performance 0 

PROS

- Parallel-arm cutting action
- Efficient dust blower
- Effective blade guard

CONS

- None

SPEC SHEET

Power	90W
Table size	413 x 253mm
Throat size	400mm
Max depth of cut	50mm
Cutting stroke	19mm
Speed range	700-1400rpm
Weight	14kg

FURTHER INFO

SIP Group

01509 500300

www.sip-group.com



The dust extract port, NVR switch and speed control

SIP 16in variable-speed scrollsaw

PETER DUNSMORE



Not every workshop needs a scrollsaw, but Peter Dunsmore reckons this machine is a worthwhile extra for small, detailed work

There are several scrollsaws on the market, all offering very much the same in terms of performance and specification, so it was with interest that I was asked to use this tool in my workshop for a few months. Although it would be fair to say that this is not the most frequently used tool on the bench, it does have its moments. In addition, it's used regularly at our local junior school for a lunchtime fretwork club.

Unlike the majority of scrollsaws, the SIP model comes with a parallel-arm cutting action which makes for a much more accurate cut

when various components need to be fitted together. The speed of the cutting stroke can be adjusted to suit the material in hand, by rotating a small control knob located by the NVR switch.

To aid the cutting process, an adjustable blower is fitted to the machine that clears the dust from the cutting line very efficiently. The port on the side of the machine allows a suitable dust extractor to be fitted to remove the fine dust at source.

Standard blades with protruding pins at each end are easily fitted to the machine simply by releasing the tension knob to the rear



Standard blades with protruding pins are easily fitted

of the top arm. There's no need to reset the tension as this is automatically set when the knob is pulled over again. An Allen key is supplied for loosening the pinch bolts so fine jewellers' fretsaw blades can be fitted for particularly detailed work.

In a similar way to most other saws, the table can be

tilted through 45° to make bevelled cuts. The clear shield can be pulled down close to the work to prevent the fingers straying too near the blade – an essential feature when younger children are using this tool.

A foam anti-vibration mat is supplied with the machine that, although not brilliant, does the job in dampening down some of the vibration. An optional extra is a small lamp that can be secured to the top of the machine and bent appropriately to shine on the work, and this can be ordered separately.

As is usual with all SIP machinery, this scrollsaw comes with a two-year warranty for peace of mind.

WV VERDICT

Although this type of saw is little used in a cabinet-maker's workshop, it does have a place for smaller detailed work, and when required it performs well. However, in the case of toy or model making this is where the fretsaw comes very much into its own. At a cost of a little under £100 and with a two-year warranty, this machine offers good value for money and is certainly worth considering.

PRICE: £139

RATING

Value 0 

Performance 0 

PROS

- Unique handle arrangement
- Thinner-than-usual blade

CONS

- Supplied blade less than ideal for cross-cutting

SPEC SHEET

Power	1500W
No-load blade speed	5000rpm
Blade	185mm 24-tooth
Bevel range	0-45°
Max cutting depth	
at 90°	62mm
at 45°	46mm
Max ripping width	310mm
Weight	4.3kg

FURTHER INFO

Screwfix

0500 414141

www.screwfix.com



WORX WT431KE circular saw

GORDON WARR



A circular saw with a difference is hard to find. Gordon Warr is impressed by some of the new features on this model from Worx

Over the years the specification, level of performance and cost of many power tools have gradually converged, with the differences between them becoming less and less noticeable. So I was pleasantly surprised when this Worx circular saw found its way onto my test bench recently. This power tool has an innovative feature which I haven't seen before.

Instead of the usual die castings used for most similar products, this saw is built with a cast magnesium soleplate and guards, but that's not what makes it significantly different. Instead of the more normal large knob at the front,

this saw has a substantial second handle – one that you can get your hand right round and grip in a very positive manner. This handle, along with the main one, has soft-grip inserts that add to the comfort and the grip. But it's not the handles that make this saw different either.

Motor mounting

It's the way the motor is mounted in the body that sets this saw apart. Both handles form part of the motor housing, and this can be rotated in its mounting. Thus the position of the handles can be adjusted relative to the soleplate, allowing you to choose the most comfortable

way to hold the saw for a particular sawing operation. The maximum amount of rotation is 60°.

Regular features

The saw has the usual pattern of a swinging lower guard which can also be raised manually, but there's no riving knife – a plunge cut could not be made with one in place.

The side fence will locate to either side of the soleplate, which has the typical arrangements for tilting and for adjusting the blade

projection. There's a small protractor scale to assist with the tilt setting, and a notch on the front edge of the soleplate gives easy visual alignment with the blade when set for normal or 45° sawing.

I used the saw for all typical uses in soft and hardwood. It offers a high level of comfort and plenty of power when sawing, even at maximum thickness. The blade is thinner than usual, so less wood is reduced to sawdust, less power is required and less noise is generated.

WV VERDICT

I particularly liked the substantial front handle, and the way in which the motor housing – and with it, both handles – can be rotated to gain the most favourable sawing position. As far as I'm aware, this is a unique feature among circular saws. There's plenty of motor power, and cutting performance is more than adequate.

If there's a downside, it's one shared with all other hand-held saws: the size of the teeth on the blade supplied. They always seem to be larger than is ideal, but a compromise to suit all sawing requirements is almost impossible to achieve. In most cases the teeth are ideal for ripping but less satisfactory for cross-cutting, or for sawing man-made boards where some splintering can usually be expected. However, there's nothing wrong with the actual quality of the blade supplied.

TAYLOR'S TESTBENCH

ANANT BULL-NOSE REBATE PLANE



This bull-nosed rebate plane from Anant is made in India. Like other Anant planes, it has a hefty casting and is well-finished. The blade needed sharpening, but took a very sharp edge. The blue enamel gives a smart finish, the blade locking mechanism is effective, and the adjustment is smooth. The casting is accurately ground, with the base flat and at right angles to both sides, so it will work accurately in either orientation. It performed perfectly as a rebate plane.

However, it is also intended to convert into a chisel plane, and to have an adjustable mouth, created by unscrewing

the front casting and removing the shims between it and the rear casting. That's the theory, but in my sample the enamel had covered over the top of the shims and locked the screw solid, so I couldn't remove the nose. This is a bit of an own goal, resulting from a lack of attention to finishing detail.

As a bull-nose rebate plane, this is a nice tool, but I'd recommend checking whether the enamel on the body is a problem before you buy.

IAN TAYLOR



A round-up of all the latest tools, gadgets and equipment for your workshop

The plane cuts rebates cleanly



PRICE: £36.95

RATING

Value 0  5
Performance 0  5

PROS

- Nicely finished, accurate grinding

CONS

- Let down by the enamel locking the shims and conversion screw

FURTHER INFO

Rutlands

01629 815518

www.rutlands.co.uk

BOSCH PSM80A SANDER

This small delta sander has a dual-action sanding pad. As it's in the Bosch 'Green' range, it's aimed at the DIY market. It takes standard delta abrasive sheets, but also has a shaped rear pad that can be used for area sanding as well, so it's effectively two tools in one. And because each sheet is separately mounted you can replace the more worn one separately as required. Dust collection is via a small removable box clipped to the rear of the sander.

It was comfortable to use and the dust collection was effective. So for small scale and detailed sanding jobs, this tool would be worth considering.



PRICE: £29.78

RATING

Value 0  5
Performance 0  5

PROS

- Can sand both tight corners and bigger surfaces

CONS

- Don't expect it to cope with demanding big jobs

FURTHER INFO

Bosch UK

0844 7360107

www.bosch-pt.com

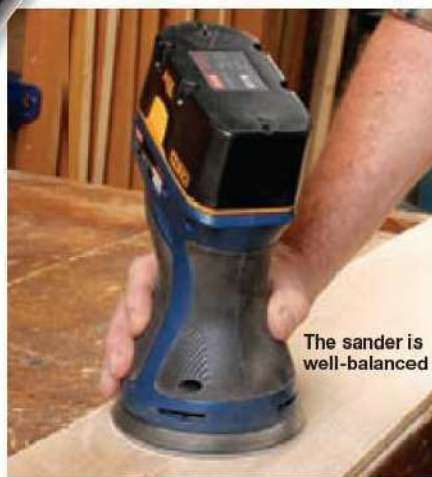
RYOBI One+ CRO-180M SANDER

This month I've packaged together two tests of items from Ryobi's One+ range. The concept here is of one 18V battery and charger pack and a range of different tools. There are 23 to choose from; I had a look at the random orbit



sander and the jigsaw (below)

You might think that a sander with a battery stuck on top would be a bit top-heavy. But this one wasn't – it felt comfortable and easy to use. The rubberised inserts in the body allow a good grip, and vibration is pretty low. The on-off switch is protected by a clear plastic hood to stop dust penetration. It worked effectively, and would be a good option if you need to sand items away from a mains outlet. But unlike most sanders, it doesn't have a dust collector or extraction outlet, so wear a face mask when using it.



PRICE:

Sander: **£39.98**

Battery kit: **£59.99**

RATING

Value 0  5

Performance 0  5

PROS

- Portable, and good value once you've got the batteries

CONS

- No dust bag

SPEC SHEET

Disc diameter	8-hole	125mm
Orbit		1.6mm
Speed		10,000/min
Weight	without battery	1.28kg
	with battery	2.2kg

FURTHER INFO

Ryobi (for suppliers)

01628 894400

www.ryobipower.co.uk

RYOBI One+CJS 180LM JIGSAW

The CJS 180LM Jigsaw has variable speed and a laser guide. There's a two-way adjustment of the laser beam, from side to side and by angle, relative to the axis of the saw. So you should be able to position the line as you want it for an accurate cut. The speed is varied by the pressure on the trigger, from zero to 2100 strokes per minute. Blade changing is a tool-less operation, and there's a neat blade storage box built in under the saw body.

Like most saws on



the market, it comes with a four-position pendulum action. The theory is that

the zero setting gives the finest but slowest cut,

while the maximum pendulum gives a faster but inevitably rougher cut. On this saw, the zero position worked fine, but there was little or no difference as I increased the pendulum action. So this was an ineffective function and pretty disappointing in use. Additionally, there's no facility for dust extraction.



PRICE: £69.99

RATING

Value 0  5

Performance 0  5

PROS

- Cheap if you already have the battery pack

CONS

- Poor pendulum action, no dust extraction outlet

SPEC SHEET

Max depth of cut	40mm	
Stroke	19mm	
Speed	0-2100/min	
Weight	without battery	2.0kg
	with battery	2.9kg

FURTHER INFO

As above

IRWIN BLUE GROOVE 6X SPIRAL BITS

This new design of spiral bit is marketed as having six times the drilling speed of standard spade bits. It has a triple cutting edge and a threaded spiral point that pulls its way through the wood. It's available in seven sizes from 16 to 32 mm, and in sets of 3 and 6 bits. I got my hand on the larger set of 6 bits,



which comes in a solid box designed to keep them safe and in good condition.

These bits are designed to be used with mains and cordless drills, so the shanks have a milled hex end to ensure a good grip in the chuck. In use, you have to be careful with your choice of drill speed. The smaller the bit, the faster you can go. However, with the larger bits you'll have to cut down the speed and engage a low gear, because the torque needed to drive these big bits is pretty high. If you try the large bits at too high a speed, you're quite likely to stall your drill. But all it needs is a bit of a feel to get the torque setting and speed right, and that comes quite quickly with a little practice.

These are a nice addition to the range of medium-sized drill bits on the market.

PRICE: £5.28 to £8.76
Set of 3 bits: **£15.50**
Set of 6 bits: **£34.98**

RATING

Value 0  5

Performance 0  5

PROS

- Clean cutting for big holes

CONS

- Care needed in selecting drill speed

FURTHER INFO

Irwin Industrial Tools

0114 244 9066

www.irwin.co.uk

FORGE STEEL BENCH PLANES

Screwfix has introduced a pair of standard bench planes into its Forge Steel range. There is a No 4 smoothing plane, and a larger No 5 jack plane. Both use 50mm (2in) wide blades. The cap lever is tightened by screwing up a brass thumbscrew. The blades and chip breaker are 2mm thick and the blades sharpened up well.

Neither plane had the vertical sides at

right angles to the sole, so that would be a problem if you wanted to use the plane with a shooting board. I checked the flatness of the soles with a straightedge and feeler gauge. The No 5 had a slight concave bow, about $\frac{3}{1000}$ in deep at the centre. This is about par for the course for hand planes of this type. This plane worked well in general trials.

The No 4 had a much bigger concave bow, over $\frac{1}{1000}$ in along one edge, but a bit less along the other. This is pretty poor, and made the plane almost unusable. With the blade at a fine setting, the plane cut only at the front and rear ends of the test board, but not in the middle. The bow lifts the blade clear of the timber surface when the plane is

fully supported by the board. So it was impossible to plane a board flat.

The flatness of the sole on the No 4 is a big problem, but the No 5 shows that the manufacturer can do a decent job. Consequently, I've averaged the ratings across the pair.

Editor's note: We'll be running an article on tuning up hand planes shortly, including fixing problems like bowed soles.



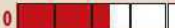
The No 5 model planed well in trials



PRICE
No 4: **£19.99**
No 5: **£24.99**

RATING

Value 0  5

Performance 0  5

PROS

- If you get a good one, decent planing at a good price

CONS

- The No 4 performed poorly as delivered, and would have needed a lot of work to level up the sole

FURTHER INFO

Screwfix

0500 414141

www.screwfix.com

HITACHI C9U2 CIRCULAR SAW

This saw, in Hitachi's futuristic green and black livery, is a solid and capable performer. The base plate is a heavy-duty machined aluminium extrusion and the fittings and adjustments



The saw cut an 85mm thick slab of oak with ease

are robust and easy to use. With a 235mm diameter blade, the maximum cutting depth is 86 mm. There are some helpful touches, including a blower to keep the cut line clear of dust, and an adjustable cut position indicator to help line up the saw accurately.

I tried it out with a demanding test – cross-cutting an 85mm thick slab of oak, just under its maximum rating. It sliced through it very smoothly and left an excellent finish. So this is a very capable saw. Any niggles? As delivered, the saw vents the chippings out of an opening in the upper blade guard. But if you're using it indoors, rather than on site, you'll probably want to use the included extraction outlet. To mount this, you need to remove the long hand lever on the moving blade guard because it fouls the extraction spout. The saw comes with a shorter lever just for this purpose, but the assembly screws on the long handle were just too tight for me to remove. Given the performance of the saw, this is a small grumble, and given a bit of time I would have fixed this. But it was frustrating not to be able to test out the extraction capability

PRICE: £169

RATING

Value 0  5
Performance 0  5

PROS

- A capable all-round performer at a good price

CONS

- Irritating over-tightened assembly screws

SPEC SHEET

Power	2000W
No-load speed	5000rpm
Blade diameter	235mm
Max cutting depth	90° 86mm
	45° 65mm
Weight	6.8kg

FURTHER INFO

Hitachi (dealers everywhere)

 www.hitachi-powertools.co.uk

in the course of the review. If a screw is intended to be removable by the user, it should be tight enough to grip securely, but not so tight that it can't be removed easily when needed.

DRAPER STEEL TRESTLES



There are times when you need to work away from your bench, especially for outside jobs. So a convenient portable means of supporting your work (or you) can be invaluable.

This pair of sturdy steel trestles would be a helpful addition to your DIY equipment if you frequently find yourself in this position. The trestles stand 800mm high and are 1000mm wide. When closed, the pair folds down into a compact 1000 x 100 x 100mm.

The trestles are solidly made, and the pair can support up to 200kg in weight. The legs are held open with a metal brace and there are solid steel blocks to stop them folding into the closed position while in use. The upper surfaces are covered with non-slip rubber pads.

I found them robust and steady in use. And since they fold down small, they won't take up much valuable storage space in your workshop or garage.

PRICE: £37.99

RATING

Value 0  5
Performance 0  5

PROS

- Solid in use, compact to store

CONS

- None



FURTHER INFO

Draper Tools

 02380 494333

 www.draper.co.uk

PRICE: £423.06

RATING

Value 0 

Performance 0 

PROS

- Excellent safety features
- Good all-round performance

CONS

- None at the price

SPEC SHEET

Power	2.5hp
Planing width	260mm
Thickening capacity	160mm
Feed rate	5m/min
Weight	66kg

FURTHER INFO

SIP

01509 500359
www.sip-group.com

ON TEST

the legs, the tables and the fence before starting work. The tables are made from a lightweight alloy, though they're well braced underneath. The quality of finish is acceptable, though the odd rough edge needs sanding down. A rub down with wire wool and furniture wax makes the surface almost frictionless.

The fence is a good length and is made from ribbed alloy. It has a sturdy support bracket and can be fixed at any angle between 0 and 45°. The cutter bridge guard is reassuringly robust. It is also made of alloy and has a sprung pressure pad on the end to help support the workpiece during edge planing. The fence is adjusted



The cutterblock and drive mechanism showing the serrated feed roller and anti-kickback pawls

SIP 01344 planer thicknesser

ANDY STANDING



Are you looking for a larger-capacity planer thicknesser at a budget price? Andy Standing thinks he's found the answer to your prayers

For the home woodworker on a budget, it's a struggle to get large-capacity machines at keen prices. This isn't unreasonable, as you can't expect professional machinery for pocket-money prices. However, it is possible to find worthwhile machines at acceptable prices. Invariably these tend to originate in the Far East, though that does not have to mean that the quality of manufacture is poor.

The SIP is a budget-priced machine with a generous capacity. Although it's obviously built to a budget, it incorporates good safety features, is easy to use, and produces an impressive finish.

The machine arrives almost fully assembled, and all you have to do is to attach

for height by means of a lever on the side of the machine.

Thickening

The cutterblock is 63mm in diameter and holds a pair of double-sided re-sharpenable HSS knives. The machine is powered by a hefty looking 2.5hp motor which is slung underneath. The thickening table is supported on four threaded columns, with the adjusting handle on the top of the machine. There's a clearly marked thickening scale. The thicknesser feed mechanism consists of a serrated metal in-feed roller and a rubber out-feed roller. These are preceded by a set of anti-kickback pawls.

Surface planing

Converting the machine from

surfacing to thickening is a relatively simple process. The delivery table is removed, and then the dust hood is swung over the cutterblock. The second part of the dust hood is removed from underneath the infeed table, and is then attached to its other half. The assembly is held together by the cutter bridge guard. Now it's simply a matter of turning the selector switch to the thickening position, setting the thickening table to the correct height, and off you go.

Safety first

Safety is an aspect which has not been overlooked on the SIP. There are three microswitches which stop the machine from operating

unless the relevant guards or tables are in place. There is also a selector next to the power switch which must be turned to the correct position before the machine will run. These features will no doubt save many an inexperienced user from a potential accident.

In the workshop

In use the SIP runs well, and produces a surprisingly good finish. The motor is powerful enough to cope with hardwoods, and the tables and fence are robust enough for general use. The switchgear is well placed, making it easy to turn the machine off with your knee in emergency. It's also compact enough to fit in a small space.

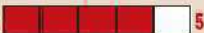
WV VERDICT

The SIP is certainly a competent planer thicknesser. It's very similar in design to the Record, Metabo, Draper and Perform machines. It is also about the cheapest of them all. It's compact and easy to use, with excellent built-in safety features. It's not intended for heavy trade use, but is ideal for the home workshop. It produces a good finish thanks to its 5m/min feed speed. Adjusters are fitted to all the major components, so it can be re-set to maintain accuracy. So if you want a solid reliable machine without a massive price tag, the SIP could be the one for you.

PRICE: £349

(free delivery from D&M Tools)

RATING

Value 0  5
Performance 0  5

PROS

- Superb build quality and attention to detail
- Automatic height adjustment lock
- Lowest noise levels in class at 83dB

CONS

- Non-standard 3in extraction outlet
- The comparatively high price

SPEC SHEET

Power	1650W
Max cutting height	155mm
Max cutting width	304mm
Max cutting depth	
3mm per pass up to 150mm wide	
1.5mm per pass over 150mm wide	
Feed rate	8.5m/min
Weight	27kg

FURTHER INFO

D&M Tools

 020 8892 3813
 www.dm-tools.co.uk



The plastic side panels are easily removed

innards. Two locking screws keep the side panels in place. Removing the sides like this provides easy access for belt changing and general maintenance.

Equally impressive is the ease of changing the Makita's two planing knives. A pair of magnetic set blocks supplied with the machine ensures that replacement blades

zero cut gauge is useful too.

A depth set screw is used to set the minimum depth of cut for repeat thicknessing. Another nice feature is the top casting which incorporates lifting handles. It's also flat – handy for resting boards on mid-workflow. The height adjustment handle folds out of the way to allow material to be passed over the top of the machine.

MAKITA 2012NB bench thicknesser

BEN PLEWES



Another bench thicknesser, another test. Ben Plewes is always looking for good reasons to upgrade his workshop machinery...

Until recently I had a Jet JWP-12 thicknesser, but its overall maintenance requirements left me thinking that other thicknessers might be better. Time for a replacement...

Then along came the Makita 2012NB thicknesser. On first inspection it appears to offer several advantages over other similarly specified machines. Firstly, it's nice and compact. Secondly, it's the quietest thicknesser in its class, which should help to keep the neighbours happy.

Build quality

The 2012NB's quality of build is first class. Solid aluminium castings at top and bottom give the machine an overall rigidity which is evident in use. The use of aluminium castings over fabricated steel pressings is the main reason why this machine is lighter than the competition. Access inside the machine is equally impressive. The blue ABS plastic sides not only help to keep the weight down but also come away easily to reveal the thicknesser's

are aligned correctly. Blade changing is a doddle with good access and easy blade setting – just as it should be.

There's on-board tool storage too, in the form of a plastic box that sits on top of the motor housing.

In the workshop

In use the Makita performs very well. Adjusting the depth of cut is exceptionally smooth. The cutterblock has an auto-lock feature which saves time in use; there's no need to activate a secondary lock to keep the cutter head in position. The addition of a

Chippings to go

Due to the large amount of waste generated by this type of machine, a typical shop vac would be overwhelmed very quickly, so it's worth budgeting for buying a chippings extractor if you don't already have one.

I have a small niggle here, because the extraction outlet is 3in in diameter, as opposed to the standard 4in diameter extractor hose. This means that an additional adapter needs to be purchased, or made, to ensure effective dust extraction.

WV VERDICT

Though expensive, this is a superb machine that competes very well with other machines of a similar price. Because of its light weight and small footprint, it's highly recommended for woodworkers who are more space conscious. All round, the Makita is a superb machine with very little in the way of compromise.

ON TEST

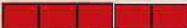


SCHEPPACH ts2010 table saw

PRICE: £473.50

Foldable base unit: £85.78

RATING

Value 0 
Performance 0 

PROS

- Generous cutting capacities
- Excellent sliding carriage
- Two-year guarantee

CONS

- Only the full-package price

FURTHER INFO

NMA Agencies

01484 400488
www.nmauk.com

GORDON WARR



Table saws knock hand-held circular saws into a cocked hat... at a price. Gordon Warr checks out the Scheppach ts2010 for value and performance



The side extension folds down for easy transport

The need to saw wood down to size is a basic requirement for any woodworker, and good though hand-held circular saws are, they are no real substitute for a table saw.

The most popular size of bench saw have a blade that's 200 or 254mm in diameter. These generally give maximum cutting depths of around 60 and 75mm respectively, although there is more to these figures than at first appears, as I'll explain.

Small but perfectly formed

Scheppach are German manufacturers renowned for quality products, sound design, top-quality materials and plenty of refinements. They produce a wide range of small machines for the

woodworker, including several bench saws, of which the ts2010 is the smallest with its 200mm blade. Small it may be, but it's available in various packages with increasing degrees of refinement. Even in its basic form, the ts2010 is a very adequate saw which is

compact and light enough to be regarded as portable. With its various optional extras, the machine becomes very sophisticated while remaining attractively priced.

The saw body is 300mm high – a little too much for comfortable use on the

SAFETY REGULATIONS

Is depth-of-cut adjustment the same as blade projection? Not according to the Woodworking Regulations from the Health & Safety Executive. These stipulate that a crown guard (or an adequate alternative) should always be in place. Not only that: the lower edge of the guard should extend at least to the roots of the teeth, which means that the depth of cut is less than the blade projection. Thus if we are to comply with these Regulations, partial sawing through the material, forming grooves and rebates and using tenoning jigs are not considered to be safe practice. Work with care!



The fence anchor has fine micro-adjustment



The rip fence adjusts backwards and forwards



A substantial protractor is fitted on the sliding carriage fence



The fence has easy-to-use telescopic extensions



Ripping stock with the crown guard dust extractor in position



Cross-cutting using the small mitre fence



Cross-cutting a large board with the length stop in use

SPEC SHEET

Output power	1200W
Blade	200mm, 24-teeth
No-load speed	5000rpm
Table size	600 x 480mm
Max cut at 90°	60mm
Max cut at 45°	48mm
Max. cutting width	230mm
	with angle fence 250mm
	with side extension 480mm
	with sliding carriage 600mm
Weight	36kg (saw only)
Optional extras	foldable base unit, sliding table carriage, folding table with extension, table length extension

workbench, but a stand is available as an optional extra which is at just the right height. This folds down to almost nothing, the saw clips to it and removing the machine from the stand takes no time at all.

Machine features

A large handwheel at the front provides all the adjustments needed for the blade. There is a read-out panel showing the blade projection, and a protractor scale showing the tilt. There's a locking knob at the rear of the body to ensure that it is firmly locked when the blade is tilted.

The rip fence is secured to the front edge of the table where there is a scale, and

the setting of the fence can be further controlled with a micro adjuster that gives fine settings down to 0.1mm. There's also a magnifier on the fence anchor to make precise setting even easier. When the side table extension is fitted, the fence slides smoothly onto it to provide a generous ripping width.

The sliding carriage

A small mitre fence is included with the basic machine, but the sliding carriage is a major add-on feature that doubles the usefulness of the saw. It can be secured and removed from the body of the saw in seconds, and is height-adjustable to ensure accurate alignment with the main table.

The rail on which the sliding table operates is 960mm long, and allows for cross-cutting material up to around 600mm wide – enough for a kitchen worktop. The table measures 550 x 250mm.

The fence on the sliding carriage is fully adjustable, with a pin being used to lock it positively at 90°. The fence carries a length stop; this also has micro adjustment for precise setting, with the stop being readily pivoted clear without moving its supporting body. With the fence fully extended, measured cross-cutting up to about 1680mm can be endlessly repeated. The fence will adjust up to 60° left or right.

Side and rear extensions

The side extension is designed to fold down, to allow the saw to pass through a standard doorway. The rear extension to the table measures 575 x 250mm, and is quickly added to provide extra support when long

workpieces are being sawn. Although it is a lot narrower than the main table, it fulfils its purpose very well and more than doubles the length of support offered.

In the workshop

Once I'd familiarised myself with the machine, it was time for some trials. My first attempt at ripping seemed to cause the wood to bind slightly, but a slight adjustment of the fence alignment soon cured the problem. Subsequent pieces were sawn very sweetly, as were the various bevel cuts I made next.

Cross-cutting proved what I had already concluded – that the sliding carriage is an excellent feature of this machine. I cut narrow and wide material, made various angle cuts and put the length stop to good use. The return stop ensures accurate right-angle sawing after angle cutting, providing all other adjustments are correct.

WV VERDICT

This is one of the best bench saws I have tested, with generous capacities and an excellent sliding carriage. It's very accurate in use, making it particularly suitable for furniture and cabinet work. And remember that two-year guarantee!

MACHINERY CHECKLIST

2: Planers, thicknessers and planer/thicknessers

MAKE & MODEL		FEATURES						
PLANER/THICKNESSERS								
		Power (hp)	Power (watts)	Planing width (mm)	Thicknessing capacity (mm)	Feed rate (m/min)	Weight (kg)	Price
Woodstar	PT85		1250	204	120	N/A	25	£207.62
Xcalibur	10in planer thicknesser	1.5		250	190	8 or 9.6	N/A	£410
SIP	01344	2.5		260	60	5	66	£423.06
Draper	BPT260	2.5		260	160	5	66	£465
Mafell	AD160		900	160	120	8	17	£475
Axminster	AW106PT	1.5		250	190	6	150	£498.58
Metabo	HC260	2.5		260	160	5	76	£499
Record	PT260	2.5		260	160	5	76	£499
De Walt	D27300	3		260	160	5	53	£594
Scheppach	HMC2600CI	3.4		260	210	5	150	£799
Xcalibur	12in planer thicknesser	3		310	220	8 or 9.6	N/A	£1100
PLANERS								
		Power (watts)	Max cutting depth (mm)	Max planing width (mm)	Table length (mm)	Weight (kg)	Price	
SIP	01334	1100	3	155	730	35	£153	
Axminster	WP150	1100	3	150	720	23	£152.75	
Rexon	J1560A	1100	3	150	720	23	£150	
Jet	54A	1295	8	150	1700	130	£772.50	
THICKNESSERS								
		Power (watts)	Max planing width (mm)	Max thickness (mm)	Feed speed (m/min)	Weight (kg)	Price	
Ryobi	EPT1531AK	1500	315	153	8	32	£223.19	
Rexon	GPRT317A	1600	317	153	8	22	£309.15	
Makita	2012NB	1650	304	150	8.5	27	£332.78	
Metabo	DH330	1800	330	152	7	35	£340	
Rexon	AP3300BQ	1800	330	150	7.3	48	£353.77	
De Walt	DW733	1800	317	152	8	33.5	£369	

Looking for new kit for your workshop? This all-new reference section brings together details of all the woodworking machinery we've tested in recent years that's still available today. This month's checklist looks at planers, thicknessers and planer/thicknessers, with a total of 20 models featured. It includes ● a specification summary ● the current price ● manufacturer's contact details, including website addresses ● our verdict on the machine ● the issue of *The Woodworker* (or in a few cases, our sister publication *Good Woodworking*) in which we originally reviewed it, so you can re-read the full test report if you wish

■ NEXT MONTH

Machinery Reference 3 rounds up the details on pillar drills and mortisers

FURTHER INFO		VERDICT		
Contact	In our opinion	Rating (out of 5)	Tested	
NMA Agencies 01484 400488 www.nmauk.com	A pocket-sized planer-thicknesser for those with small workshops and limited budgets. Steel tables and fence. Ideal for home use. Compact, but with a flimsy fence and a noisy motor	3	Nov 2005	
Woodford Woodworking Machinery 0161 480 2800 www.woodfordwm.co.uk	Solid cast iron machine with heavyweight performance. Three knife block and dual feed speeds ensure good finish. A keenly-priced machine, but a bit rough round the edges	4	April 2006	
SIP 01509 500359 www.sip-group.com	A solid machine at an attractive price. Similar to Record, Metabo and Draper. Robust and easy to use. Alloy tables and adjustable fence. Supplied with stand. Fiddly dust hood	4	Nov 2005	
Draper 02380 266355 www.draper.co.uk	A solid planer similar to the SIP, Record and Metabo. Sturdy fence and good safety features. Compact and easy to use, but with a fiddly dust hood	4	July 2007	
NMA Agencies 01484 400488 www.nmauk.com	Remarkable scaled-down combination machine with impressive performance. Accurate and efficient. Easily stored in limited space Excellent performer, high quality finish, rather high price	3½	May 2005	
Axminster 0800 371822 www.axminster.co.uk	Substantial machine, with cast iron tables and steel casing, so wheel kit essential. Three-knife block, excellent switchgear, permanently attached metal dust hood.	4½	July 2007	
Metabo 02380 732000 www.metabo.co.uk	Compact planer-thicknesser with alloy tables and leg kit. Almost identical to Record, Draper and SIP models. Well finished, good performance. Well-positioned switches, fiddly dust hood	4	July 2007	
Record 0870 7701777 www.recordpower.co.uk	Similar to Draper, Metabo and SIP models. Supplied with hardened alloy tables and integrated wheel kit. 5 year guarantee. Fiddly dust hood	4	July 2007	
De Walt 0700339258 www.dewalt.co.uk	Portable planer thicknesser for workshop and site use. Removable legs. Solid build. Good all rounder. Very quiet motor, thicknessing table extensions. fast mode change	4½	July 2007	
NMA Agencies 01484 400488 www.nmauk.com	Heavyweight machine with cast iron tables and unrivalled quality of finish. solidly made with rugged fence. Great fence, but fiddly to convert between modes	4½	July 2007	
Woodford Woodworking Machinery 0161 480 2800 www.woodfordwm.co.uk	Large capacity machine at an attractive price. Four-knife cutter block and two feed speeds ensure good finish, but a little rough round the edges	4	Spring 2006	
Contact	In our opinion	Rating (out of 5)	Tested	
SIP 01509 500359 www.sip-group.com	A compact planer whose size belies its performance. Solid cast iron construction and powerful motor ensure a good finish. Integrated dust extraction, but a noisy motor	4	Autumn 2007	
Axminster 0800 371822 www.axminster.co.uk	Competent and compact surface planer with polished cast iron tables and re-sharpenable knives. Compact, easy to store, limited capacity	4	Autumn 2007	
Rexon 01709 821966 www.rexon.co.uk	Identical machine to the Axminster WP150. Compact, smooth running, slightly higher price	3½	May 2005	
Axminster 0800 371822 www.axminster.co.uk	Good quality planer with three-knife block. Well designed with easy set-up. Solid construction with cast iron fence. Vibration free, quiet running, awkward cutter guard	3½	March 2006	
Contact	In our opinion	Rating (out of 5)	Tested	
Toolbank 0800 068 6238 www.toolbank.com	Simple and basic machine with good anti-kickback system. Non-folding adjusting handle vulnerable during transit. Good dust extraction, small extension tables	3½	Sept 2006	
Rexon 01709 876611 www.rexon.co.uk	A substantial thicknesser with large folding tables incorporating support rollers. Well made. Capable of handling heavy timbers. Large support tables, stiff anti-kickback fingers	4	March 2004	
Makita 01908 211678 www.makita.co.uk	Compact and classy thicknesser with some useful additional features such as depth of cut guide and locking depth stop. Well made and easy to carry. Poor dust extraction	4½	Sept 2006	
Metabo 02380 732000 www.metabo.co.uk	A sturdy thicknesser, robustly constructed with useful additional features. Generous folding tables. Well finished. Well made, useful features, not the lightest machine around	4	July 2007	
Rexon 01709 876611 www.rexon.co.uk	Solid and smart machine with good fine adjustment. Cutterhead lock and good design. Well matched cutter and feed speed gives fine finish. Powerful, good capacity, very heavy	4	Sept 2006	
De Walt 01753 567055 www.dewalt.co.uk	Good solid machine with useful professional features. Solidly made with large folding tables. Good performer, but dust hood fouls folding table	4	March 2004	

BUSINESS OPPORTUNITIES



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KITS & HOBBIES

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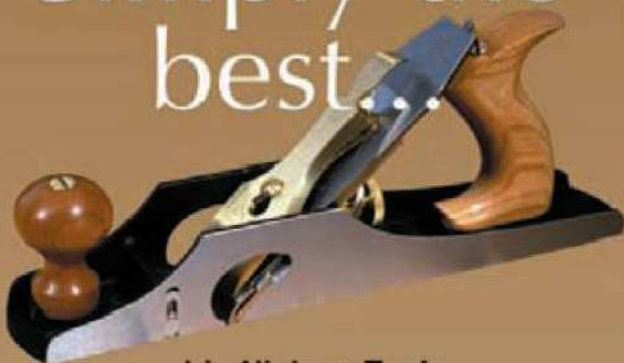
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NOVEMBER 2006

PROJECTS: Mission seat, Table and trestle seat, Bedside petrol pump cabinet, Stable door, Belt sander jig, Village notice board in oak
FEATURES: Routing panelled doors, Making mortise and tenon joint, This 'ol workshop
TESTS: Six of the best F-clamps, Giant test dovetailers, Hong Kong style planes, Festool Rortex, SIP 12in table saw
TURNING: Using a vac chuck, Berkeley box, Ball turning jig plans



DECEMBER 2006

PROJECTS: Dressing mirror, Bracket clock, Dancing cow toy pt1
FEATURES: Saw sharpening, The woodsman, Iron Mighty: mortisers, Staffs show review
TESTS: Giant test: cordless nail guns, SIP 16in bandsaw, Six of the best: workshop tapes, Dakota dowel plate, UCC sash clamps, Dremel Stylus, Bessey spring clamps, Dremel glue gun
TURNING: Lidded bowls, Wooden chucks, Lighthouse money box



JANUARY 2007

PROJECTS: Hepplewhite card table, Dresser stool, Kitchen bar stools, Dancing cow toy pt2
FEATURES: Carving rosettes, Secret drawers pt1, Iron Mighty: lathes
TESTS: Giant test: impact drivers, Six of the best: workbenches, Draper 18v combi, Nova lathe, Jet air filter, Super Nova chuck jaws
TURNING: Laminating techniques, Segmented bowl, Little acorns



FEBRUARY 2007

PROJECTS: Tool chest, Fire surround, Kitchen units, Saw handle, Kitchen table
FEATURES: Love spoons, Secret drawers pt2, Iron Mighty: Drill press, This 'ol' workshop, 2006 index
TESTS: Giant test: Bobbin sanders, Six of the best: eye protection, Makita router table, Bosch I-driver, Draper pocket knife, Irazola screwdrivers, Trend pocket hole jig, Henry Taylor Kyro tools
TURNING: Going global, Treadle lathe tech, Coin holders



MARCH 2007

PROJECTS: Oval dresser box, Kitchen ladder units
FEATURES: Handling sheet materials, Tyrolean carving festival, Investing in forestry, Secret drawers pt3, This 'ol' workshop, Iron mighty: combi sanders, Wicker coffins, Houndstooth dovetails
TESTS: Giant test: pro palm sanders, Six of the best: utility knives, Ryobi one+ kit, Freud FT3000 router, Draper diamond whetstone set, Makita impact driver, Tacwise 400EL nailer
TURNING: Candlesticks, Traction engine, Towel rail



APRIL 2007

PROJECTS: Low dresser, Cherry bed, Black Forest stool
FEATURES: Saw blade test, Handcut dovetails, Planemaking pt1: metalwork, Ally Pally review, Secret drawers pt4, Iron mighty: dust extractors
TESTS: Giant test: biscuit jointers pt1, Dewalt dovetail jig, Bosch PSR 14.4 drill driver, Sorby Proedge sharpening system, Behlen sealers, Axminster rolling rule, LED light
TURNING: Erring stand, Shaker ring-handled knob, Elm platter



MAY 2007

PROJECTS: Planemaking pt2: rebate plane, Snooker cue case, Carving flowers, Wildlife nesters pt1, Jewellery box
FEATURES: Boxmaking, Why buy a mini jointer?, Door fitting tech, Feather mitres, Allergies, Mitre blade tune-up
TESTS: Giant test: biscuit jointers pt2, Dremel scroll saw, Bosch GFK600 router, Metabo multihammer, Dakota hold downs, Faithfull wheel dresser, Zona razor saw
TURNING: Quiche, Split hollow form techniques, Piercing & colouring, Finials



JUNE 2007

PROJECTS: Kitchen dresser, Wildlife nesters, Bell-top clock, Oak laminated door
FEATURES: Mitres & bevells, Plane making part 3, French polishing, Woodworker of the Year 2006 results
TESTS: Giant test: Small routers, Draper Expert circular saw, Wolfcraft depth stops, Screwfix digital calliper, Axminster work lights, Dakota rounders & balers, Draper vice, Japanese saws, Metabo SCM saw, JessEm Rout R Lift FX, Mitre saw blade group test, Six of the best: Paintbrushes
TURNING: Making wooden chucks, Vacuum chuck revisit, Drinks coasters



JULY 2007

PROJECTS: Fall-front bureau, Mobile jointer stand, Oak dining table, Wildlife nesters
FEATURES: Routing with a multi-profile cutter, Plane making part 4: The jack plane
TESTS: Giant test: Planer thicknessers, Axminster planer, Japanese chisels, Screwfix letter/number stamp set, Faithfull sawtooth bit set and carpenter's brace, Draper Expert sander, Axminster bench dogs, Metabo bench thicknesser, Bosch sliding mitre saw, SIP 12in mitre saw, Machine-Dro saw gauges, Six of the best: Toolbelts
TURNING: Mini screw chucks, Musical box, Period spindles



AUGUST 2007

PROJECTS: Welsh dresser, Box clamping jig, Country-style table, Picture frame, Arts & Crafts headboards
FEATURES: Planemaking part 5, Upgrading your grinder
TESTS: Giant test: Cordless jigsaws, Felder combination woodworking machine, Draper Expert belt sander, Forge Steel saw, Axminster workshop magnet, Dakota mini-vice, Erbauer percussion drill, Axminster corner chisel, Faithfull screwsink set, Dakota angle gauge, Festool Kapex sliding mitre saw, CMT router, Six of the best: Work gloves
TURNING: Measuring and marking, Hand mirror



SEPTEMBER 2007

PROJECTS: Writing slope, TV cabinet, MDF bed base
FEATURES: Plane making part 6, Getting the best from your scroll saw, Air filter silencer
TURNING: Pearwood scoop, Table lamp, Unusual chucks
TESTS: Giant test: Combination sanders, Rage 3 mitre saw, Jet bench thicknesser, Festool circular saw, Woodstar router table, Draper combi drill driver, Dakota mitre square, Butt chisel set, Axminster punch set, Forge Steel laser, Pick-up tool set, Pull saw, Zinsser shellac spray, Ashley Iles carvers, Tormek Truing tool, Router Ease guide, Six of the best: Extension reels



OCTOBER 2007

PROJECTS: Oak display cabinet, Fluted table, Chest of drawers restoration
FEATURES: Bench-top router jigs, Planemaking part 7, A brief history of screws
TURNING: Off-centre chucks, Rotunda moneybox, Thimbles
TESTS: Giant test: Whetstone grinders, Hammer bandsaw, Slidegrinder, Draper jigsaw, Axminster storage, Ryobi One+ drill/driver, Irwin wood bits, Skil sander, Dakota polishing kit, Festool TS55 saw blades, Axminster and SIP dust extractors, Bosch palm router, SIP bandsaw, Six of the best: Mallets
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HME dust extractor, 2ft cube under-bench unit, 100mm input; £50. DeWalt DE6251GB dovetail jig, unused; £50.
07710 542873 day, 01924 402248 eve (W Yorks)

Workshop contents, power and hand tools, sale due to bereavement; phone for details.
01905 794072 (Worcs)

Startrite 352 floorstanding bandsaw, comes with guide fence plus 4 new blades, excellent condition; £550.
07724 386061 day, 01978 362755 eve (N Wales)

Elektra Beckum spindle moulder, 240V, excellent condition; £525 ono.
01244 543954 (Cheshire)

Woodcarving tools – selection of Ashley Iles and Robert Sorby carving tools plus carving vice; phone for details.
01905 794072 (Worcs)

DeWalt DW1251 radial arm saw with 60-tooth TCT blade, about 10 hours' use only; £375.
01685 377259 (S Wales)

Trend Mk 2 router table, floor model, Trend T9 and DJ300 plus accessories and extras, little use; £350.
01908 645530 (Bucks)

Tools old and new, planes, chisels, sanders and many more; phone for details.
07936 132347 (S Yorks)



Eumenia Universal

multi-function woodworking machine, 1.37hp motor, complete with instructions, very good condition; £200.
01689 870974 (NW Kent)

Axminster APTC M900 lathe, including floor stand, 6 and 12in tool rests, 4-prong drive centre, live tail centre and two banjos; £260 ono.
01993 708757 (Oxon)

DeWalt DW60 dust extractor for woodworking machinery, 500cu m/h extract rate, spare bags and hose, very good condition; £30. Buyer collects.
07905 705564 (Herts)

American black walnut, oak, ash, cherry, iroko, ideal for small-scale turning, clock and box making etc; £8 per box.
0161 339 5161 (Lancs)

WANTED

Hegner scrollsaw with speed control in good working order, reasonably priced, for old-age pensioner.
01470 542486 (Isle of Skye)

Woodworking hand tools, especially old wood and metal planes, wanted by collector. Write to Mr B Jackson, 10 Ayr Close, Stamford PE9 2TS or call
01780 751768 (Lincs)

Moulding planes, not H + R. Please send details and profiles to **Farrow, 8 Mongers Mead, Barcombe, East Sussex BN8 5BE**

USE THIS FORM TO BOOK YOUR **FREE** AD

This space is available only to private individuals wishing to buy or sell woodworking machinery and tools. The maximum value of any item for sale must not exceed £500. For items over £500, please ring 01689 899212. Each coupon is valid for one free insertion in the next available issue. **MAXIMUM NUMBER OF WORDS 20.** The publisher accepts no responsibility for errors or omissions in this section.

PLEASE GIVE GEOGRAPHICAL LOCATION (I.E. BEDS, BUCKS ETC.)

Name _____

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Signature _____

Please publish this advertisement in the next available edition of The Woodworker. I am a private advertiser and have no trade connections.

PLEASE TICK: FOR SALE ☐ WANTED ☐

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

The Woodworker
MARKETPLACE

6 OF THE BEST COUNTERSINKS

Countersinks are extremely useful tools, particularly for the furniture maker. Although some modern screws are self-countersinking, these are intended for more constructional jobs and not for high-quality work. Countersinks can be used not only for setting screws flush with the surrounding surface, but also for de-burring holes in metal and for fine-tuning the machine-cut countersinks in hinges.

They can even help when you're fitting hinges. Simply place the hinge in position in its recess and gently rotate a countersink in each of the screw holes. Remove the hinge and your drilling positions are marked in the exact centre of the holes.

Countersinks are available as hand tools and as accessories for power drills. The latter are made in both carbon and high-speed steel (HSS). Carbon steel is fine for timber, but choose HSS if you intend to work on metal. Here is a selection, all available from Axminster Power Tools 0800 371822 www.axminster.co.uk



**The Woodworker
RECOMMENDED**



1 Lie-Nielsen hand countersink

Price: £15.03

The name Lie-Nielsen always signifies tools of the highest quality. This hand countersink has a three-flute head and a smooth curly maple handle, held in position with a brass ferrule. Comfortable to hold, it cuts smoothly and leaves a fine finish. It's a beautiful tool to own and use, but comes at quite a high price.

2 Vitrex hand countersink

Price: £3.98

The Vitrex is another hand tool, though at a more down-to-earth price. Made from carbon steel with a rose pattern head, it has a rather coarse cut. The plastic handle is hard and poorly shaped, though it's acceptable for occasional use.



**The Woodworker
BEST ON TEST**

3 Axminster chatter-free countersink

Price: £7.20

Rather than using a number of cutting flutes, this countersink has a single cutter mounted in a conical body. Made from high-speed steel, it can be used on both metal and timber and leaves a beautiful polished finish. It is, as its name suggests, very smooth to use. Highly recommended.



4 Axminster universal countersink

Price £24.79

If you have a lot of holes to drill and countersink, it can be tiring to have to use two different tools. So why not combine both processes in one operation? This countersink is designed to be clamped around any drill bit with a diameter from 3mm to 6mm. It provides a neat countersink, and if driven deeper it will also counterbore the hole. It's a bit expensive, but think of the time it will save!



5 Engineer's countersink

Price: £9.81

This is a well-made five-flute countersink, available in a range of sizes. It's made from M2 tool steel, which makes it effective both on wood and metal. It should be run at a slow speed to produce the best results.

6 Footprint Rose Countersink

Price: £2.64

This is a large eight-fluted countersink, available in both carbon and high-speed steel versions. It needs to be run at a fairly low speed to achieve the best results. At this price, it's very good value for money.

**The Woodworker
BEST VALUE**

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Northern Showroom:

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September

22nd September
Axminster Power Tools Centre
Limited - Special Offers and
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Sheppey Way
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Sittingbourne
Kent
ME9 8QP
Tel: 01795 437 143

28th & 29th September
Surplus Sales, Aldermaston;
Demo Weekend - Special Offers
and Technical Advice.
Unit 47 Youngs Industrial Estate
Paices Hill
Aldermaston
RG7 4PW

October

2nd - 3rd October
KRAFTKABIN TRADE SHOW
- with Metabo PowerTool &
Woodworking specialist - Matt
Sheen
248-254 LONDON ROAD
STOKE ON TRENT
ST4 5RH
Tel: 01782 416102
<http://www.kraftkabin.co.uk/>

10th October
Jewson Breakfast Morning
GATESHEAD - Special Offers &
Technical Advice
DUNSTON SAWMILLS
FLOUR MILL ROAD
TYNE & WEAR
NE11 9JB
Tel: 0191 4609231
<http://www.jewson.co.uk/>

11th October
Jewson Breakfast Morning
SUNDERLAND - Special Offers
and Technical Advice
POTTERY ROAD
LOW SOUTHWICK
TYNE & WEAR
SR5 2BP
Tel: 0191 5169219
<http://www.jewson.co.uk/>

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and Technical Advice
HYNDBURN ROAD
ACCRINGTON
LANCASHIRE
BB5 1AT
Tel: 01254 383238
<http://www.jewson.co.uk/>

18th October
Jewson Breakfast Morning
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HIGHER MILLS
BRIDGE STREET
LANCASHIRE
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Tel: 0161 7646011
<http://www.jewson.co.uk/>

28th Oct - 1st Nov
Interbuild 2007 - The UK's most
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Tues: 9.30am - 5.00pm
Wed: 9.30am - 5.00pm
Thurs: 9.30am - 4.00pm
<http://www.interbuild.com/>

November

16th - 18th November
D&M Tool Show - The U.K.'s
Premier Tool Exhibition
Kempton Park Racecourse
Staines Road East
Sunbury-on-Thames
Middlesex
TW16 5AQ
Friday 16th 10am - 5pm
Saturday 17th 10am - 5pm
Sunday 18th 10am - 4pm
<http://www.thetoolshow.com/>

16th - 17th November
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specialist - Matt Sheen
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