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EDITORIAL

Consultant Editor: Ben Plewes

Production Editor: Mike Lawrence

Technical Editor: Andy Stanning

PRODUCTION

Designer: Malcolm Parker

Illustrator: Michael Emley

Commercial Designer: Don Wright

Retouching: Michelle Dicks & Chris Tait

Productions: Robert Haydn & Simon Gould

Ad Productions: Robin Gray, Tel: 01688 890285

Leanne Turner, Tel: 01688 890285

MAGAZINE AND

www.getwoodworking.com

ADVERTISING

Sales Director: Janice Dutton

Tel: 01689 890237

Group Sales Manager: Kim Norman

Tel: 01689 890246

Sales Executive: Clario Istock

Tel: 01689 890240

Sales Executive: Dawn Dratch

Tel: 01689 890280

Marketing & Subscriptions: Daniel Wann

Tel: 01689 890284

MANAGEMENT

Events Director: Jay Walters

Creative Director: Nikki Parker

Deputy Creative Director: Miki Doherty

Managing Director: Owen Davies

Executive Board: Peter Harkness

Owen Davies, Adam Laird, Jonathan Tapp

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WELCOME



A NEW BEGINNING

Last year was a year of upheaval on the Woodworker. Editors came and went. Meanwhile, old Mike Lawrence (of DIY fame) took over the reins as caretaker, and used his many years of expertise in the magazine business to help steer the ship towards improved content and a revamped and reorganised layout.

Now it's time for our new editor Ben Plewes to put his stamp of authority on the magazine. You'll know him already from his role as the editor of our brilliant new website, and also for his regular contributions to the magazine. He's a dedicated woodworker who's got his finger on the pulse and knows what's what in the World of Wood. Now he's the man, and he's here right now! Here's his manifesto for the future. Take it away, Ben...

A bright and bold future

"Blimey, this is exciting – climbing aboard The Woodworker like this is an all-new experience for me! One thing I'm sure of though, is that 2008 is going to be a great year for The Woodworker. We've got some superb features in the pipeline, from some of the best contributors in the business. And, we'll be working hard over the coming months to make The Woodworker the best it's ever been!"

Woodworking online

"Oh, and don't forget to log on to www.getwoodworking.com, which is the internet home of The Woodworker. There's banter in the forum, inspiration in the galleries, and lot's of archived articles and video demos just waiting for you over there.

I hope you'll enjoy the journey ahead, because there are plenty of great things on the horizon...

Ben Plewes

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MISS!**

THE INTERNATIONAL WOODWORKING EXHIBITION

CONTENTS

What's in store for you this month...

p48



ON THE COVER

- 10 Joiner's toolbox
- 26 Picture framing
- 38 Garden room
- 70 **GIANT TEST:**
Budget jigsaws



p79



p70



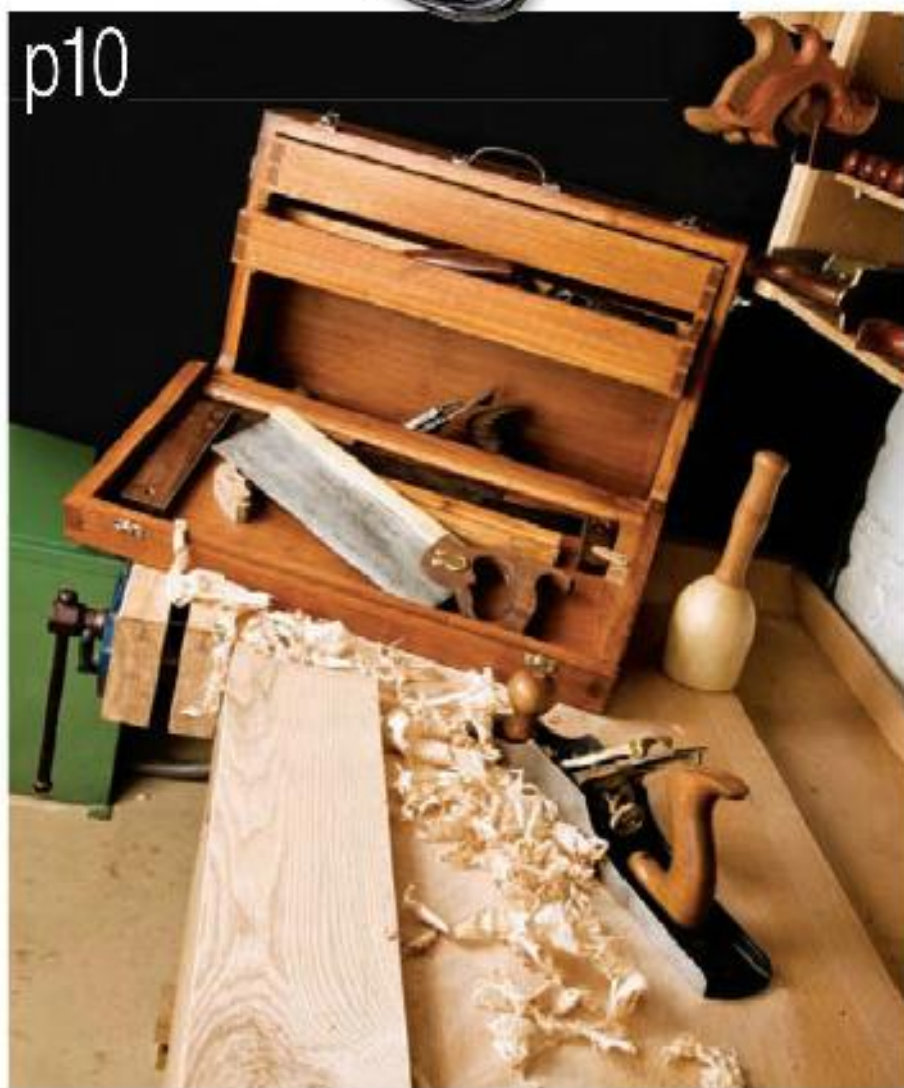
p16



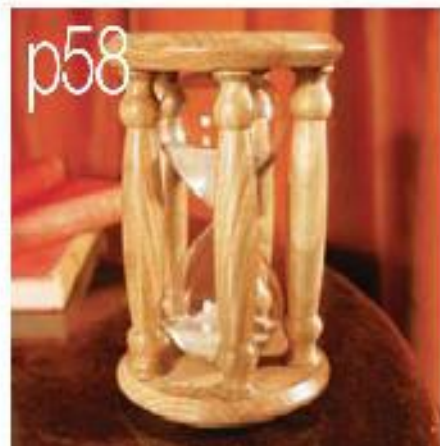
FEATURES

- 10 **Traditional toolbox**
If you hate cheap plastic or rusty metal, why not make yourself a traditional joiner's tool box. Paul Sellers has done just that.
- 16 **Radiator cover**
Fed up with looking at ugly old radiators? Can't find an off-the-peg cover? Peter Dunmore shows you how to make your own.
- 24 **Woodworkers on the web**
Ben Prews explains how to go about selling stuff on the internet.
- 26 **Picture framing**
Framing pictures is a technique most woodworkers can master with a few essential tools and skills, as Ian Taylor explains.
- 32 **Hall mirror**
The mirror in the hall is a traditional piece. Gordon Warr has given the idea a modern makeover.

p10



p58



February 2008

The Woodworker

37 WORKSHOP

38 Garden room

Keith Smith's attractive garden building is built to a far higher standard than your typical garden shed

46 Bench makeover

Ian Taylor gives his old workbench a new lease of life with a fast and easy refurb

48 Woodworking adhesives 1

We asked Keith Smith to put woodworking adhesives to the test. Here's the first part of his report

52 Carving with the router

Armed with a clever router cutter and a set of templates, Peter Dunsmore finds that simple carving is easier than he thought



57 TURNING

58 Turn! Turn! Turn!

With the Byrds' famous song in mind, Chris has created this unusual hourglass with five columns – one for each Byrd

62 What lies beneath

What you see isn't always what you get. Bob's elegant sycamore bowl looks plain and simple... until you turn it over

64 Choosing the right chuck

Treating yourself to a brand new chuck means facing a lot of choices. Ian Wilkie checks out the main points you need to look for



69 ON TEST

70 GIANT TEST: Budget jigsaws

Andy Standing test-drives twelve little crackers

78 Site power tools

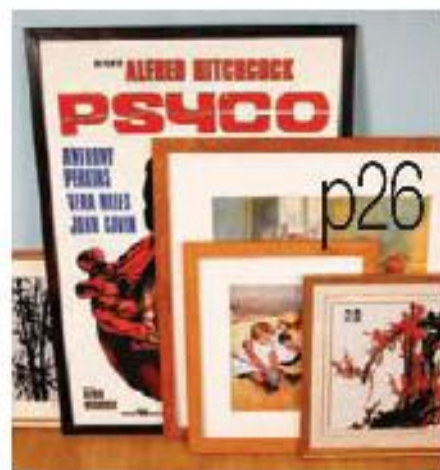
79 Faithfull spokeshaves

79 Draper hand drill

80 Axminster slipstone set

80 Axminster 4-sided diamond stone

81 Behlen aerosol wiping stains



WIN
£4000 OF PRIZES
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COMPETITION
SEE PAGE 65

81 Rutlands magnetiser

82 Onelda Dust Deputy

83 Proxxon belt sander

83 Proxxon drill/grinder

84 Record TS200C table saw

86 Trend push block

87 Veritas low-angle jack plane

88 MACHINERY CHECKLIST 6: Random orbit and palm sanders

98 Six of the best: Toolbox saws

REGULARS

- 3 Welcome
- 8 News
- 9 Diary
- 19 Next month
- 54 Q&A
- 56 Subscription offers
- 96 Back Issues
- 97 Marketplace



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WHAT'S NEW

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The sanding plate diameter is 125 mm and is made of temperature-resistant white foam designed to last four to five times longer than conventional plates. This also applies to the structure of the Veltro-type fastening material that repels dirt for longer, thus retaining its adhesion characteristics. The price is around £82.

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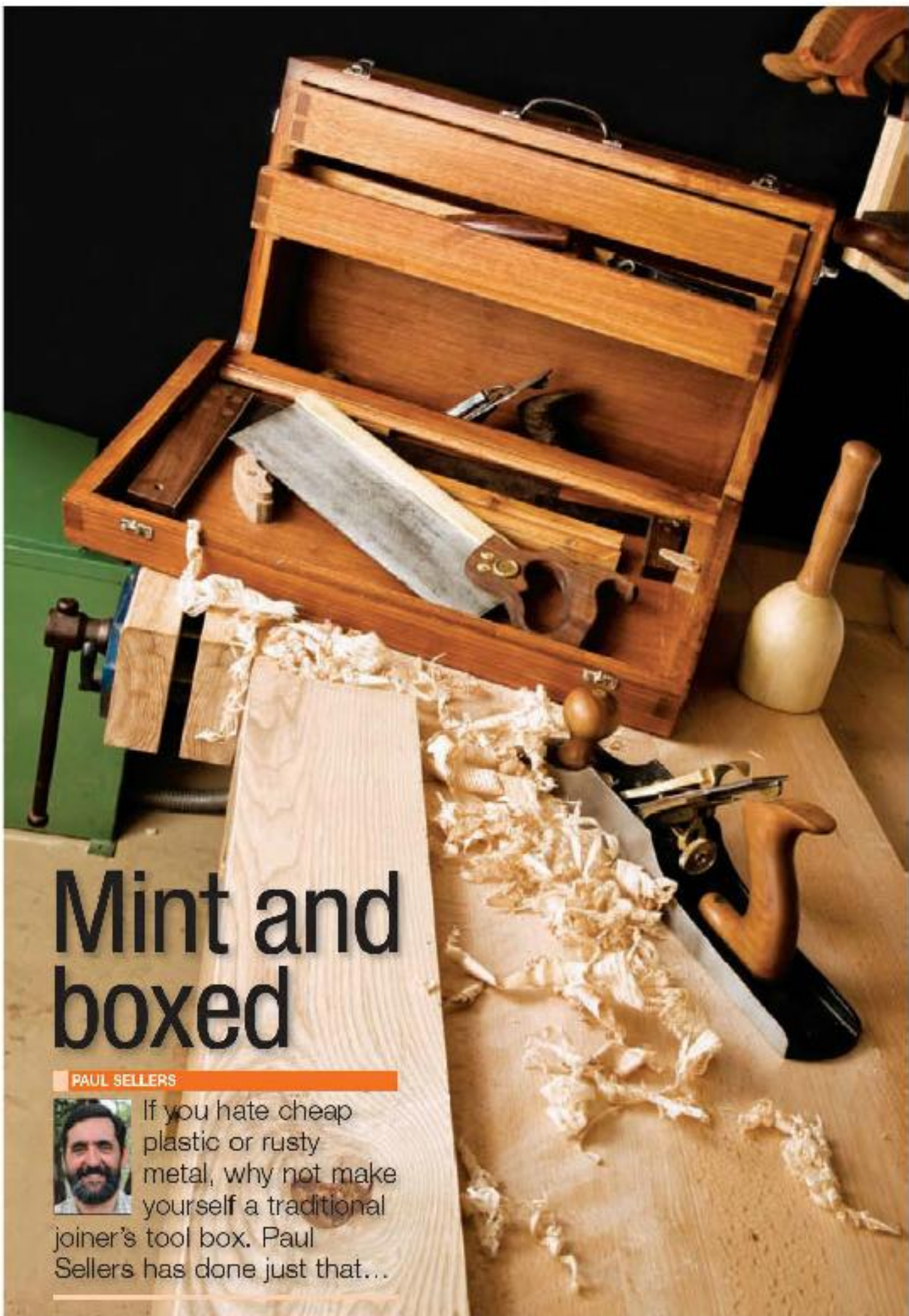
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PAUL SELLERS



If you hate cheap plastic or rusty metal, why not make yourself a traditional joiner's tool box. Paul Sellers has done just that...

Many years ago as a boy apprentice, most of the men I trained under had large tool chests neatly placed at the foot of their benches. Their airtight lids stayed firmly shut except when a special tool was needed for a particular job.

Next to (or on top of) these chests stood their travelling tool boxes, which were more compact than the larger life-lidded chests. Through the years I've designed and made many such boxes. Here's a simple version that can be made in a day using hand tools or machines.

before sanding and painting the boxes. They also painted their names in the top right-hand corner in old English script.

These toolboxes are as useful today as they ever were, and I still use mine for working in customer's homes and for travelling to do demonstrations. Often my students copy mine, or write to me for plans, so here's how to make your own.

Selecting the wood

I've made this box from spruce because of its strength-to-weight ratio, which is the

highest of any known wood. It's still relatively inexpensive and is easy to work with. I've picked out fairly straight-grained material to make it easier for hand planing. Redwood would be fine too.

Cutting the box parts

Prepare the stock for the box frame to the cross section given in the cutting list (165 x 20mm). Then form a 12 x 9mm rebate on each edge along the length of the board, **photo 1**. I find it easier to rebate the whole length and then to cut the pieces to final



1 Cut the two rebates first...



2 ...then cut the parts to length



3 Measure in 22mm from each end...

TOOL BOX CUTTING LIST

All dimensions are in millimetres

Part	Qty	L	W	T
Box top/bottom	2	550	165	20
Box sides	2	400	165	20
Front/back	2	534	384	9 ply
Hinge rail	2	510	30	19
Till front/back	2	510	60	12
Till ends	2	100	60	12
Till base	1	496	86	8 ply



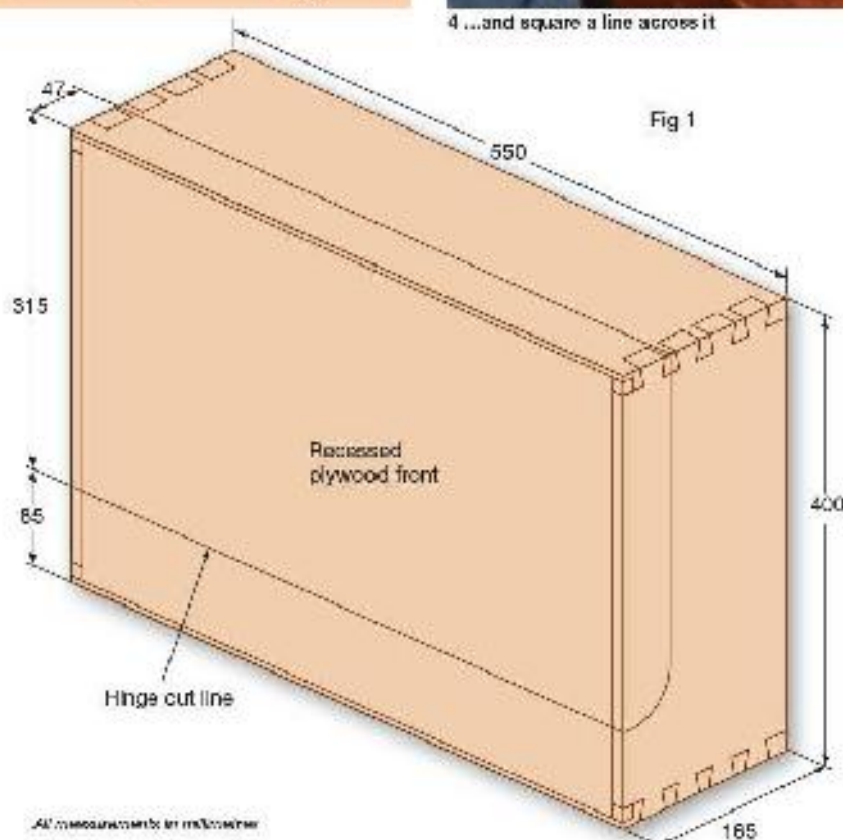
4 ...and square a line across it

This type of tool box was traditionally painted matt black and several of mine are, but I chose Rouseal's water-based Woodstain because of its quick-drying yet durable waterproof qualities. I also like the warm colour and feel of the antique pine in a satin finish. You can of course make it from hardwood, or stain a less attractive wood such as spruce or pine if you wish. Typically these chests were made from pine because weight was important – no one wants a box that's heavy even when empty.

Box design

In earlier times, the front and back facings of the box were made from frames that enclosed loose panels of solid wood. These floating panels allowed for the shrinkage and expansion caused by changes in the moisture content. The panel rested in a groove around the inside rim of the frames.

Back in the late 1950s, as plywood gained popularity, many woodworkers began to skin their boxes with plywood. Rough joiners would simply glue and nail the facings on; others would screw the facings on and then fill the screw heads with Hammer stopper





5 Mark up the dovetails on each end

length afterwards, photo 2. You can of course use power tools for these jobs if you prefer, and this applies to every stage throughout the project.

Marking out the dovetails

On all four pieces, measure in 22mm from each end, photo 3, and mark a line across the work with a square, photo 4. This line represents the depth of the dovetail pins and tails. Use a sharp pencil for the initial marking out. These lines will later be redefined using a marking knife, which will give a perfect seating for the corresponding joint part. Mark out the dovetails on the ends of both the short pieces (see figs 1 and 2 and photos 5 and 6).



7 Cut down to the shoulder line



13 Again trim out with a coping saw...



19 Cut the rear skin and test its fit



6 Extend the lines onto the faces

Cutting the dovetails

Cut down the lines to the shoulder line as shown. Leave the pencil line in by cutting just on the waste side of the lines, photo 7.

Remove the bulk of the waste between the tails with a coping saw, taking care to cut just above the shoulder depth line, photo 8.

It's best to remove the outside sections near to the dovetails with a dovetail saw. Here you can cut exactly to the line, again just on the waste side, photo 9.

Using a sharp knife and square, mark the shoulder line on both faces of the board and trim out any remaining discrepancies with a sharp chisel to create a perfect shoulder, photo 10.



8 Trim out the waste with a coping saw



14 ...and square off the shoulder line



20 Trim it if necessary with a plane

Creating the pins

Transfer the shape of the tails to the top pieces using a very sharp, long-pointed pencil, photos 11 and 12. I prefer a pencil to a knife on pine because pencil shows up better, and the pine recesses can be cut slightly 'far' because pine compresses more than most hardwoods. In harder, more dense-grained woods I always use a knife because hard grains take a knife mark well and of course the denser woods are less tolerant of tight-fitting joints.

Cut down the lines with a tenon or dovetail saw, staying just on the waste side of the line, and then remove the bulk of the waste using a coping saw, photo 13.

Using a sharp knife and square, mark the shoulder line on both faces of the board, photo 14, and trim out any discrepancies with a sharp chisel as before. Test the joint dry to make sure it fits well, photo 15. If any trimming is needed, use a sharp chisel to get a perfect finish, photo 16.

A test run

Repeat the joint-making process for the other three corners, labelling each pair of components (A-A and so on) so you don't get in a muddle. Then assemble the box for



9 Cut off the outer sections with a dovetail saw



15 Test-fit the joint dry...



21 Apply glue all round the rebate

a dry fit to make sure all of the components fit together well. It's easier to make any adjustments now rather than when you have glue on everything.

When you're happy with the fit, glue up the box corner by corner, **photo 17**, and drive the glued joints together with a hammer and scrap of wood, **photo 18**. Clamp the assembly if necessary and check that the box is square by measuring from corner to corner.

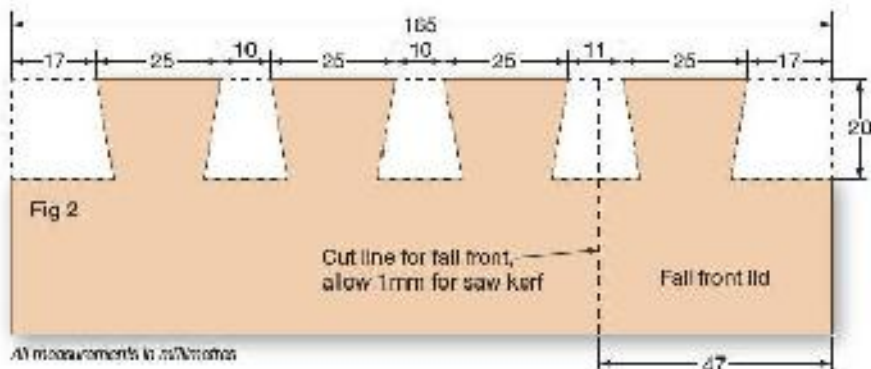
Skinning the box

With the dovetails completed, you're now ready to fit the 9mm plywood skins into the recesses you related earlier. Begin with the back skin. Cut the plywood with the saw and test its fit, **photo 19**. Trim and fit if necessary with the plane, **photo 20**.

Glue the panel into the recess, **photo 21**, and nail or screw it in place. It's better to screw it, but 25mm panel pins will work too, **photo 22**, and they're easier to punch and fill than the screws, which must be countersunk and filled.

Cutting the fall front

It's now time to mark the cut lines of the fall front box lid (see **fig 1** again). You must



cut the internal round corners on each of the sidepieces with a coping saw before you skin the front of the box. So go ahead and cut the rounds now, **photo 23**, but leave the straight line cuts until after the panel is glued and screwed in place.

Cut the plywood front panel to size and trim it for a perfect fit. Glue and pin it in place and leave it to dry. Then trim the box with the plane, **photo 24**, fill and screw and nail heads, **photo 25**, and sand all the surfaces smooth, **photo 26**.

Extend all of the layout lines for the fall front onto the plywood face and cut through it with a tenon saw, **photo 27** and panel saw, **photo 28**. I used an older saw because

the saw kerf is thinner, but if you don't have a thin-kerfed saw any saw will work as long as it's not too thick. The saw kerf thickness is usually just enough to leave the exact size gap need to prevent the lid from binding, so don't worry too much about this.

Follow the lines all the way through to the rounded corners from both the front face and the top line of the box lid and the two will soon be separated, **photo 29**. Reverse the saw direction as necessary.

Trim up any saw marks with the hand plane, **photo 30**, or a file, followed by sandpaper, **photo 31**. Try not to take too much off the curves, as a large gap will be unsightly.



10 Mark the shoulder line for final trimming



11 Use the tails to mark out the pins...



12 ...and extend the lines onto the faces



16 ...and trim the pins if necessary



17 Glue up the frame corner by corner



18 Tap the joints together one by one



22 Pin the panel into the recess



23 Make the curved cuts in the frame sides



24 Trim all the frame edges with a plane



25 Fill all the nail or screw heads...

Adding the hinge rails

You can now add two 30 x 19mm hinge rails to take the hinges and stiffen the plywood edges. Mark their lengths directly from the box, photo 32 and the lid, photo 33, in case there are any minor discrepancies in the box construction.

Cut the pieces to length and glue them to the edges of the plywood on both the lid and the box, photo 34. I also screwed and clamped these rails in place, photo 35, to add to their strength because these edges are subjected to a lot of stress when the box lid is opened and closed. Compensate the screw heads, fill them after the screws are driven in and sand flush when dry.



27 Start the separation with a tenon saw



26 ...and sand the surfaces smooth

Marking up the hinges

I use 60mm brass hinges, but any hinge around that size will do. I set my hinge 60mm from the end of my box, the same distance as the hinge length. That way you can use the hinge to set the starting point of the recess, and to position the second mark.

Mark the hinge position with the lid in place on the main box so you can mark both the box and the lid at the same time, photo 36. Place the hinge in position on the box lid and mark both sides of the hinge with a sharp knife, photo 37.

Instead of setting up a gauge to mark the front-to-back width of the hinge flap onto the door, I use the hinge itself and run my

knife along the edge of the hinge as shown, photo 38.

Set a marking gauge to the thickness of one of the flaps and mark it onto the face of the box lid. I am actually using a cutting gauge because it cuts through the layers of plywood and sets a lip to guide my chisel, photo 39. Remove the waste wood with a chisel to form the recess, photo 40.

Fitting the hinges

With the lid hinge recesses completed, use a bradawl to start the screw holes, photo 41, and drive in the screws. Remember when using slotted screws that you should always line the slots up lengthways with the direction of the grain.

Set the lid in position in the box and, using a sharp knife, mark on either side of both the hinges as before. Remove the lid and cut the recesses into the rail using the same procedure as before.

Screw the hinges into the recesses, fit the catches, photo 42, and open and close the lid to check its action. Adjust the hinges to make sure that the lid and box align perfectly without you having to force the catches, photo 43.

Complete the job by making the till (see



28 Switch to a panel saw at the corners...



29 ...and complete the cut to separate the lid



33 ...and the other to fit the lid



34 Apply glue along each hinge rail



35 Screw and clamp it in place



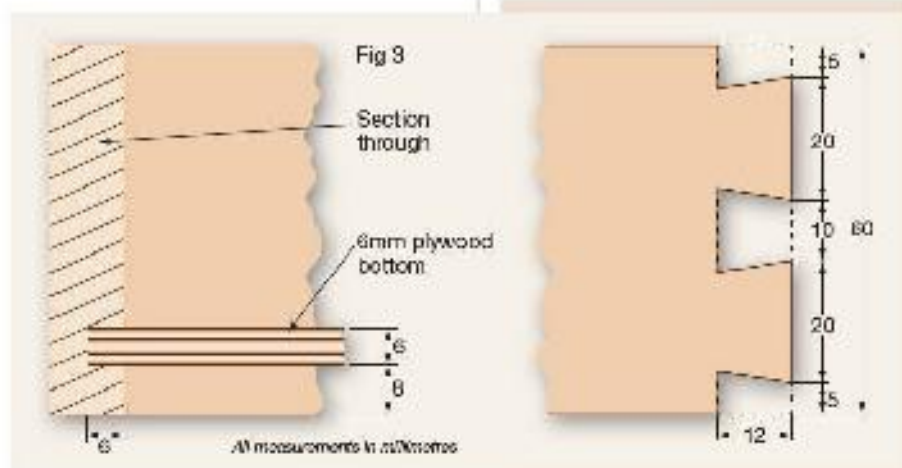
39 Mark the recess depth with a cutting gauge



40 Remove the waste wood with a sharp chisel



41 Use a bradawl to start the screw holes



faces of the main box. Mark the shorter till sides directly from the inside face of the back of the box to the front edge of the box sidepieces.

Cut the pieces to length using a fine-toothed tenon or dovetail saw. Mark out the dovetails, fig 3, and cut them following the procedures detailed for the main box earlier.

With all of the dovetails prepared, run a 6mm groove around the inside bottom edge of the till pieces, 8mm up from the bottom and 6mm deep. Fit the 6mm plywood bottom and dry-fit the till together with the plywood in place to make sure all the joints seat together well.

If they do, glue up the dovetails and cramp up the till if the joints are at all loose. When the glue has set, sand all the surfaces smooth and apply a matching finish.

Finally, screw the two softwood cleats that support the till to the inside faces of the box sides, allowing 1mm for clearance between all of the components.

MAKING THE TILL

I usually have two tills in my box, but one may be all you need. I often make my top till narrower to hold my chisels and other such long, narrow tools, but in this case I made the till 60mm deep because it doesn't have very much depth from front to back. Mark the long till pieces to length by marking directly from the inside

panel, right), and your tool box is ready for its finishing touches, photo 44.

A decorative finish

Paint the box if you want to. This helps to keep the box looking presentable. This is where I keep my cups during the day, and the inevitable mug rings will soon disfigure bare wood. When you're done, replace the catches, add the handles and install your precious tools in their new home.



30 Remove the saw marks with a plane



31 Sand the curved cuts to a smooth radius



32 Mark one hinge rail to fit the box...



36 Mark the hinge positions on box and lid



37 Mark both sides of the hinge with a knife



38 Then run the knife along the hinge edge



42 Attach the two catches so you can...



43 ...check that the lid closes accurately



44 Your tool box is now ready for finishing



Hide and seek

PETER DUNSMORE



Fed up with looking at ugly old radiators? Can't find an

off-the-peg cover?

Peter Dunsmore shows you how to make your own

Radiator covers are readily available from DIY superstores, but only in sizes to suit standard radiators. That's all well and good, assuming that the walls are reasonably square to begin with.

This is where my friend's problems began. He lives in a house dating back to the 17th century, when the original occupiers weren't particularly fussy about straight lines and levels, and he wanted a

simple cover for a modern radiator.

I made this design using an 1800 x 600 sheet of 12mm MDF and a similarly sized piece of fretworked MDF (available from B&Q). There's little point in my giving fixed dimensions, as yours will be made to measure to suit the radiator you want to hide. However, the principles of design and manufacture will work for any reasonable size you might need.



1 Fit a fence to the router to cut the flutes on the front stiles



2 Use a suitable step to ensure the flutes are level with each other



3 Using the Trend router carver system for the decoration



4 Mark the location of the biscuit joints on all the panels



5 Check that the frame is square by comparing the diagonals

Making a start

To begin with, cut the parts for the front frame – two stiles, the top and bottom rails and the centre muntin – to size. Make sure the ends of the MDF are cut square. The joints are all made using a biscuit jointer, so there's no need to allow any extra length in the timbers. The two side panels are cut to a size that depends on how far the radiator juts out from the wall.

Get routing

Fit the side fence to your router and cut a series of flutes along the length of both stiles using a suitable cove cutter, photo 1. An easy way of ensuring that the flutes are evenly spaced is to set the fence to cut the centre one first. Then reset the fence to cut the two flutes either side of this, working from both sides of the MDF. Repeat for the final pair of flutes.

Taking a few minutes to clamp some scrap in place to act as a stop will make using the router much quicker and easier, photo 2, and will guarantee that the ends of the flutes will all be level.

Next, rebate the rear faces of both outer edges of the stiles using a bearing-guided

rebate cutter. The 12mm MDF will be glued into these rebates at a later stage.

Adding decoration

I used the Trend router carver system to decorate the top rail with a motif, photo 3. This system is generally used for decorating kitchen doors and the like, but I felt that the effect could be quite attractive on this project. Once set up, this is an easy and effective method of creating a carved feature on any piece of timber. Turn to page 52 for a feature describing how to use the system in more detail.

Assembling the front panel

Lay the top and lower rails against the stiles and use a pencil to mark the location of the biscuits, photo 4. Note that the top rail is set about 30mm lower than the top of the stiles to leave a gap along the top of the cover. This is to allow the warm air from the radiator to travel freely into the room.

The lower rail was also raised above floor level, partly because the floor wasn't level but also because the radiator valve was located under the radiator and so this gap provided essential access for temperature adjustment.

Once you've cut the joints, glue together the various components

making the front frame. Check that this is square by comparing the diagonals of the openings, photo 5. In the absence of suitable clamps, just lay the frame on a large flat surface and use masking tape to hold the joints closed until the adhesive has dried.

Fitting the fretwork panels

Before gluing the sides in place, fit the bearing-guided rebate cutter into the router and set the depth of cut to match the thickness of the fretwork panel. Working in a clockwise direction, cut the rebates on the inside face of the frame panels and use



6 Note the reinforcing blocks and the rebate for the panels





7 Soften the edges using a rounding-over bit in the router



8 Apply the dark colour over the carving using a mini-roller

a chisel to square up the corners.

Both side pieces are glued into their rebates, using a square to check that the components dry at right angles to each other. Masking tape is useful to hold the pieces together. When the adhesive has dried, glue some scrap reinforcing blocks between the side pieces and the front frame, photo 6. When all is dry, turn the frame face up and use a rounding-over bit to soften the edges between the front frame and the side pieces and around the two front panels that frame the fretwork, photo 7.



9 Cut the fret panels to size and paint them before you fit them

10 Use scrap pieces of MDF to hold the front panels in place

Starting the paintwork

Painting is a matter of personal preference, but I chose colours to complement the room where the cover was to go. I used ordinary emulsion on the MDF after priming it with a suitable sealer. I used shellac, as it's

quick drying and less smelly than proprietary MDF sealer.

The contrasting colours were achieved by painting the pale colours into the pattern first using a brush. I applied two or three coats and wiped away excess paint with a cloth before it dried. I then applied the overall colour using a roller, taking particular care not to force the paint into the flutes, photo 8. I painted the fretwork panel after cutting it to size, photo 9, but before fitting it into the frame. When all the paint was dry, I glued off-cuts of MDF to the inside of the panel to form a groove along the bottom edge of the frame, photo 10. Then I slotted the bottom end of each panel into the groove, and glued and pinned it into its rebates all round the frame.

Finishing the cover

The only part left is the MDF top. I made this to suit the width of the cover, allowing a 20mm overhang on each side. However, because the wall was so warped I left the depth of the top wider than required at this stage. The panel below describes how I went about scribing and cutting the top to fit the wall precisely.

Once that was done, I cut the top down to its final depth, and glued two strips of MDF on the underside so it could be pushed into place and held down by friction. Lastly, I screwed two metal brackets in place on the inside faces of the sides and then screwed these to the wall at the rear of the unit.

FURTHER INFO

Trend Machinery

0800 487363

www.trend-uk.com



Trend's Perfect Butt (right) marks an accurately scribed line. The scribed top was a gap-free fit against the uneven wall

SCRIBING THE TOP

Trend produce a neat little gadget called the Perfect Butt, designed for scribing timber against uneven surfaces, above right. Although primarily aimed at the kitchen fitter, this is an ideal situation for its use. Once the line is marked, simply follow it along with a jigsaw to get a top that's a perfect fit to the wall, above.

You can achieve the same effect by cutting the profile roughly to size after measuring the depth at various points, and then laying a washer flat on the surface. Hold a sharp pencil in the washer hole and roll it along against the wall. The resulting line will be a perfect profile, marked as far away from the wall as the width of the rim of the washer. That's why you need to cut the front edge of the panel after the wall profile has been scribed and cut. You can then use a router cutter to apply a moulding to the edge of the top.

Details are correct at time of going to press but are subject to change without notice

NEXT ISSUE

The March 2008 issue is out on February 8th



TABLE FOR 8

Peter Nicholson makes an extending dining table in pine



OPEN SESAME

Keith Smith finishes his garden room door



ON TEST

Andy Standing bench-tests router tables



COUNTRY SEAT

Jim Robinson crafts a stunning garden bench



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You're invited to the Palace!

The Alexandra Palace, that is. Yes, over the weekend of 8-10th February the International Woodworking Exhibition (IWEX) will be at the Ally Pally in London N22. So why not come along and join the teams from Good Woodworking, The Woodworker and Practical Woodworking at London's best woodworking show?

WOODWORKING UNDER ONE ROOF

Turner, carver or cabinetmaker, old hand or newcomer, hand tool enthusiast or power tool user—you'll find all aspects of woodworking brought together under the roof of the Great Hall. The exhibitors include:

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- **Dewalt** • **Chestnut Products**
- **Hamilton Edge** • **Carroll Tools**
- **Langdons of London** • **Lincolnshire Woodcraft** • **Record Power**

So IWEX is the perfect opportunity to try your choice of tools, equipment and materials before you buy.



GETTING TO THE ALLY PALLY

By road Alexandra Palace is one mile from the A406 North Circular, five miles from J2 on the M1, and 8 miles from J24 on the M25.

By rail & underground By rail, you can travel direct to Alexandra Palace Station; the nearest underground station is Wood Green, on the Piccadilly Line.

MEET THE EXPERTS

With its demonstrations and masterclasses, the show also gives you the chance to meet the experts. There'll be individual makers—Tony Rhodes, Gary Rance, Mark Hancock—and organisations, such as the Association of Woodturners of Great Britain, the Toymakers Guild and the British Woodcarvers Association. Among them will be US maker John Jordan, who is best known for his textured and carved hollow vessels. For someone whose work belongs to the permanent collections of more than 20 museums, John draws his raw materials from some unusual sources: "Many of the woods that I use are from the dump or construction sites. I find great satisfaction in creating elegant objects from material that was destined to be buried or burned."

John Pizey, meanwhile, has spent his life restoring antique furniture using original materials, such as reclaimed veneer, in an effort to keep pieces as authentic as possible. At the show, John will be demonstrating various techniques, such as rubbing,



French polishing, colouring and wax finishing with appropriate materials.

Ben Russell, a founder member of the West Cork Craft and Design Guild, is coming over from Ireland for this year's show to give some terrific masterclasses on woodcarving, including carving caged balls, choosing and using woodcarving tools, hand and power sharpening techniques. Ben has also promised to explain why he sometimes sets fire to his woodcarvings—something you probably won't see the gentleman joiner, Christopher Hall, doing very often!

Fine joinery is Christopher's forte. A classically trained cabinetmaker, he's renowned for his uncompromising craftsmanship and eye for detail. This year he'll be teaming up with DeWalt to stage three masterclasses each day. At 11:00, Christopher will be illustrating his introduction to power tools for the home woodworker by making a coffee table. At 13:00, routers and spindle moulders are his theme, and at 15:00, Christopher will be showing you how to get the most from your power tools with a range of jigs and attachments.

After that lot, you'll be ready for a sit down on our magazines' stand. We'll look forward to seeing you there!

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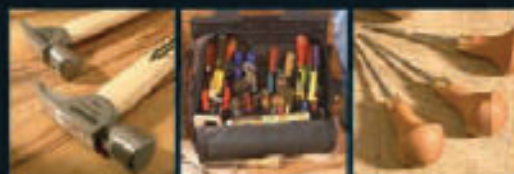
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Welcome to part 4 of Woodworkers on the web. This month Ben looks at how to sell stuff on the internet



Woodworkers on the web

4: Selling on the internet

Selling services is very different to selling products, the former being more straightforward because you don't need to accept online payments through your website. All you really need to do to sell a service is have a good, informative website with your contact details clearly visible. When someone is interested in your service they will probably give you a call or email you to take things further. Part 4 of Woodworkers on the web is primarily concerned with selling physical objects over the internet, where the ability to take payments online is a prerequisite.

Making choices

There are many ways to sell online. Some work well, while others are cumbersome. Some are expensive to set up, others relatively cheap. A big consideration to bear in mind is how much time you want to devote to running your online shop. If you're a one-man band or you just like selling the items you make in your spare time, then you probably need the most hassle-free option. If, on the other hand, you have already established a strong customer base, then perhaps you need an e-commerce solution that integrates well

with your existing website. Many successful businesses have more than one internet selling platform in operation.

The eBay way

One of the best ways to get selling quickly is to use eBay, the online auction site. You could just do what most sellers do, and either auction off your products or sell them for a fixed price. Or you could take things a step further and set up your own eBay shop.



The 'Open-a-shop' page on eBay

This is relatively simple. All you have to do is set up an account, log in, then look for the link in the left hand column that says 'Open an eBay shop'. The site offers various solutions to meet the needs of different types of sellers. The simplest option is free to use and allows you to try it and to see if it's for you. Pricier options give you more exposure on the site and advanced selling tools. You can add your own categories and design your shop page to resemble your business too.

A trusty platform

Over the last few years, eBay shops have really taken off. And if you consider that eBay is one of the most trusted purchasing platforms on the web, offers secure transactions through paypal and has its own tried and tested feedback system for buyers and sellers, it becomes clear that eBay shops have a lot to offer the serious seller.

I'm using examples of tool shops here because they're established businesses that are relevant to our craft. The principles outlined here could just as well be applied to a shop selling cabinets, wood turnings or any other physical item that can be sent to a customer by mail or courier.



Axminster's eBay shop page



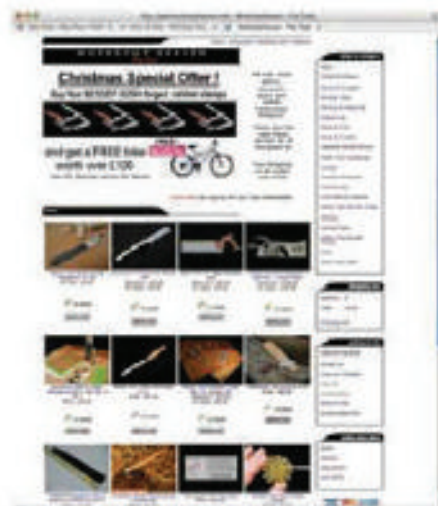
Workshop Heaven's eBay shop page

Independent shops

Many businesses such as Axminster and Workshop Heaven have their own internet shops separate from eBay, where you can buy products directly from their websites.



Axminster's own website features thousands of products



Workshop Heaven's own website has an integrated shop

Axminster's website contains their entire catalogue of products, complete with special offers and news. Workshop Heaven has an impressive range of hand tools for the discerning woodworker. Setting up this kind of online shop takes a lot of hard work and investment, so it's worth taking some time here to assess what you really need.

Just a few products

For selling a small range of products, it's relatively straightforward to take online payments through paypal. It's safe, secure and trusted by many people who use the internet. The payment buttons and prices are set up manually by a web designer, then linked into your existing paypal account.

A medium-sized shop

For this you'll need a third-party shopping cart solution. This will give your website basic shopping cart functionality and allow you to add inventory. This type of third party solution makes it easier to increase

the size of your product range and make changes to existing products. It also allows browsers to add items from your inventory into their shopping baskets before proceeding to the checkout, where they pay for the items and receive an invoice.

This kind of system often allows for basic data capture too, whereby registered members, or shoppers, on your site can opt to leave their details with you for future communication. This is ideal for sending customers newsletters or special-offer emails. It's a powerful tool that lets you keep in contact with people who have already shown an interest in your site.

Expect to pay between £100 and £300 per year for a shopping cart subscription. I have used RomanCart (www.romancart.com) in the past, and while it's fiddly to set up, it gives very good value for money and allows you to link the cart into an existing paypal account.



Roman cart offers a shopping cart solution for e-commerce websites

Loads of products

If you have more ambitious requirements, you should think about setting up a database-driven website. This really is beyond the scope of this article, but if you're thinking along these lines I would suggest setting up a meeting with a web designer to discuss what options are open to you. It's a big decision, so don't just limit your conversations to one designer. Think of it as phoning around for a quote, but remember you usually get what you pay for. Doing your homework will definitely help!

Summing up

As you can see, there are many ways to sell online. Whatever you decide to do, remember to keep things as simple as you can while concentrating on building up trust with customers. Go with established solutions where possible, and get your message out there as consistently as you can. Good luck...

BANK PAYMENTS

If you would rather take credit and debit card payments without using the paypal service, you will need to set up a merchant trading account with your bank. This can get pricey, so I would advise shopping around.

A word of warning though: one of the biggest challenges for an online shop is instilling trust in potential shoppers. By using systems such as paypal and eBay that they're familiar with, shoppers are more likely to place an order with you after just a few visits. Building up trust with customers is probably the most important thing you will do, so be sure not to jeopardize this, and be consistent so people know what to expect over time.

enjoy picture framing every once in a while. It's a side of woodworking that's fairly straightforward and gives results pretty quickly. There's also lots of scope for creativity, and since every picture is different, it's always a challenge in deciding on the best frame, mounting board and dimensions to use. With a bit of care and practice you'll get results that can look as good as the professionals.

I usually store up pictures for framing until I've got enough to fill up a weekend in

the workshop. This article tracks through one such 'frame fest', which covered five very different pictures.

Moulding choices

There's an enormous variety of mouldings available on the market, from plain to elaborate, in all sorts of sizes. I buy commercial mouldings from a local professional picture framer who doesn't mind selling the moulding separately. Some won't do this, providing only a full framing

service only, but it's always worth asking. However, manufactured mouldings can be expensive, and it's perfectly possible to make your own.

For this batch of frames I used shop-made mouldings in American cherry which I left plain (cherry mellowed to an attractive deep red colour that doesn't need any cosmetic refinement), ash which I stained black, and a gold finished commercial moulding. It's essentially a matter of selecting a moulding that best complements the picture you're framing.

Making your own mouldings

This is a straightforward job, provided you only want simple profiles. To start, I thickness the stock, **photo 1**, rip the boards to width, then hand plane the separated lengths to give one completely flat edge on each. You can then run stacks of these through the thicknesser to bring all the mouldings to the same width, **photo 2**, making as much or as little as you want.

With the stock for the mouldings prepared, the moulding can then be cut using a router table. This is a job that needs finger boards to hold the stock tight against

In the picture

IAN TAYLOR



Framing pictures is a technique that most woodworkers can master with a few essential tools and skills, as Ian Taylor explains with these examples





1 The first stage in making your own mouldings is to thickness the stock



2 Next, rip the stock into lengths, then thickness these to width



3 Using fingerboards on the router table ensures consistent, accurate results



4 Cut the first mitre at one end of each frame component...



5 ...then use the end stop to give precisely matching lengths

the table and the fence, so that the shaping is consistent, **photo 3**.

You get a better cut if the back of the moulding (as viewed from the front of the picture) is against the fence, rather than against the table. This is because splintering is possible along the edge that butts against the fence. With this method you might get splintered edges, but they're invisible in the finished moulding. If you run the stock through with the back face against the table, the splintered edges can be visible from the front.

I left the cherry moulding with a simple rectangular section. With the ash, I rounded over the outer edges and the inner front edge, to give a softer profile.

Setting the dimensions

Deciding the lengths of your components is the most critical step to getting a good result. The overall dimensions depend on the size of the image, the visible width of the mounting board border if you're using one, and the thickness of the moulding.

As a rule of thumb, I find that the border looks best if it's more than the thickness of the frame, and less than a quarter of the image's smaller dimension – usually much less. If you find it difficult choosing a border width, make some scale drawings covering a range of options and choose the one that looks best. Note that traditionally the bottom border is a little wider than those at the sides and top.

Border or not?

You need of course to decide whether you actually want a border. One of the pictures I tackled in this batch was an original movie poster (for *Psycho* – but note, an Italian poster with subtly different spelling!). I thought it would look silly with a border. It would also have made it huge, since the image was 1000x700mm itself, so I opted for a simple black ash frame. This is only 30mm wide, in a picture whose shortest side is around 750mm. I think it looks fine.

Sizing the moulding

The selection of the moulding raises similar choices. Too wide, and it'll dominate the picture; too thin, and it'll just look puny. A

6 Dedicated frame clamps (see detail, right) ensure the corner mitre joints are tight





7 A V nail in position over the corner joint, ready to be driven home



8 With care, you can tap the V nails fully home with a pin hammer



9 One of the pinned frame joints; three nails give a strong joint



10 Black dye wiped onto the ash frame gives a quick, attractive finish

frame width between 5 per cent of the shortest overall dimension of the picture and perhaps even as much as 15 per cent should look OK. But often you'll have to compromise outside this range.

Cutting the mitres

There are several ways to cut the mitres. I used to use a simple mitre box and then trim the frames to length on a mitre shooting board. This worked, but needed a lot of care to make sure that matching frame components were the same length. But this is a job that cries out for a decent mitre saw. With a good saw, you can get accurate cuts, exactly to the finished length, and with clean ends, ready for assembly. Professional framers use expensive powered mitre trimmers, but I use one of the Nobex saws, **photo 4**, which has given me excellent results.

Cut the stock slightly overlength, saw the mitre at one end of all pieces, then use the length stop to define the dimensions of each piece, **photo 5**. If you're making square frames you'll need only one setting, and you can clamp them out like a production line. But if you're making a rectangular frame you'll need two different settings for the long and short edges.

Sometimes you'll find that your cutting dimensions are too large for you to use the length stop, as was the case with my relatively large 'Psyco' poster. If so, mark up the desired length on one piece and mitre the component at both ends. Then use that

as a template to mark up the length of the matching component.

Selecting clamps

You'll need an effective clamping system to hold the components together while you fix them. Mitre clamps are the obvious option, but you'll need four. I use a widely available

aluminium frame clamp that incorporates a steel band. This can tackle a range of frames from the tiny up to 'Psyco' size; the latter frame had a perimeter of around 3.6 metres, close to the limit for this clamp.

Using 'V' nails

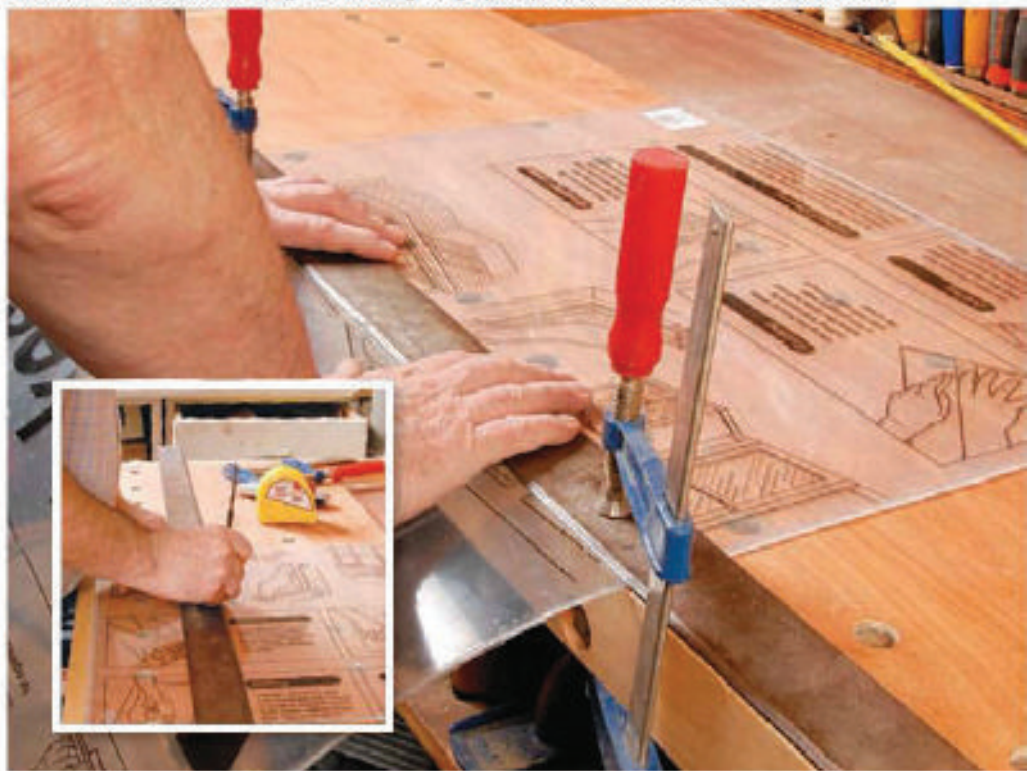
While you could try a simple glued assembly, this isn't advisable if you want a long-lasting frame. The mitre joints represent a halfway house between long and short grain assembly and, as such, you can't guarantee a good bond.

I've had success with a combination of glue and 'V' nails. These are metal fixings with a V shape that hold mitres tightly together. To start, set up the band clamp and check it clamps everything tight before applying any glue. When I spread the glue on the joints, I make sure that the upper side – the edge along the outer face – is clear of glue. This helps minimise any squeeze-out on the visible face, which can be a problem if you need to apply a finish after assembly. You'll need to check, of course, and if there is any squeeze out make sure that it's removed with the tip of a chisel and cleaned up with a damp cloth.

Assembling the frame

Work with the back of the frame uppermost and tighten up the clamps, **photo 6**, making sure that the components are level. You can then position and drive home the V nails on the reverse side, **photo 7**. There are tools to help you do this and, again, the professionals will have powered versions to speed things up and give consistent results. But I've found that using a pin hammer gives good results if you're careful, **photo**

11 Scribe the acrylic sheet using a steel straightedge (inset). Press down sharply to break the sheet



8. Use up to three nails at each corner in wide frames, photo 9, and one or two in narrower ones.

These fixings are certainly easier to use in softwood than in hardwood, which is perhaps why most commercial framing is done in softer timber. The 'V' nails cost around £9 for 400, so they aren't expensive.

Adding a finish

If you've made your own moulding, you'll want to add a finish to the visible faces at this stage. For the cherry frames, I wiped on an oil varnish. For the ash, I used a black acrylic dye, photo 10, and finished with Danish oil when the dye was dry. A couple of coats gives a deep colour, without masking the grain pattern of the ash.

Acrylic glazing

I don't use glass for my picture framing. I prefer to use acrylic sheet, from my local DIY store. It's safer to use, and more resistant to household bumps and especially workshop damage. It's easy to cut it to size too. Measure the inside dimensions of the rebate in the frame and make the acrylic insert about 2mm shorter in length and width, so there's a bit of expansion room.

A clean break

The cutting process is similar to that for glass, at least in principle. Scribe along the cutting line – I use a sharp engineer's scriber, photo 11 – then snap the sheet along the line. But while this last stage simply involves a sharp tap for glass, you need a hefty push with acrylic. I line up the scribed line along the edge of my workbench and clamp the sheet to the benchtop directly above the scribed line, using a heavy 4ft steel rule as the straightedge for the clamping. It's best if you can arrange it so that the waste side hangs over the bench top. Press down sharply on the waste, and you'll get a clean break along the line, photo 12. Then simply cut the protective plastic backing sheet to separate the two pieces.

Cleaning up the edges

Occasionally you might not get a clean break, especially if you haven't pressed down sharply enough at one side of the cut. This will leave a bit of waste still attached, sticking out beyond the straightedge clamp. If that happens, snap off the excess with a pair of pliers – it'll break cleanly at the scribed line. Remove the clamp and, if necessary, clean up the edge with a file. In my batch of five pictures, involving ten cuts of the acrylic sheet, I only had to do any corrective filing work once.

You'll also need to cut a backing board. I usually use hardboard, but you could also use 6mm MDO, or plywood. Simply cut the sheet so that you get a panel that fits comfortably into the rebate.

Cutting your own mounts

If you've decided to use a mounting board, then it's essential that it's cut crisply. If not, it'll detract from your enjoyment every time you look at your picture (even if others might not notice). To get a neat mitred corner, you really need a custom-made 45° cutting tool.

Mine comes from the French company Maped, which specialises in paper marking and cutting tools, photo 13. It goes without saying that unless you want cut marks across your bench – or worse, your dining table – you'll need a cutting mat.

Perfect corners

The procedure is pretty straightforward, though initially it's a bit counter-intuitive. First of all, cut the mounting board to fit inside the frame rebate. Then mark out the corners of the cut-out on the back of the mounting board, to match the dimensions and position you want for the visible image. Finally mark a further set of corners a specified distance inside these. For my mount cutter and its rule, this inset is 25mm, but it may well be different for other brands. Line the rule up against the inner marks and cut the angled mitre cut-out, photo 14.

A special marking gauge makes the corner definition very quick. This is essentially a modified marking gauge with a pencil instead of a pin or blade, photo 15.

Mounting the image

Often the size of the picture will be a good bit less than the frame or mounting board, so you'll need to ensure that both are properly aligned before you close up your frame. I usually fix the picture to the back of the mounting board, using removable tape. You can then start the assembly.

Final assembly

Remove the protective plastic film from both sides of your cut acrylic sheet. Unfortunately this process generates static electricity and that means the acrylic sheet is an amazingly effective dust collector. You'll need to neutralise this. I find a simple application of window cleaning fluid with a clean kitchen towel removes the static and the dust at the same time.

The sandwich goes together into the frame as follows: acrylic sheet, mounting board, picture, then backing board. When all is in place and you're happy with the results, tap or push panel pins or flat picture framer's springs into the inside of the frame rebates to hold the back panel.

Finally, for a professional finish, seal the back with brown paper parcel tape, photo 16. You immerse this in water to soften the paper and the glue, then press it into place. It dries tight and flat, and keeps dust, moisture and insects from getting into the back of the picture.



13 Depress the blade and draw it along the line to make the mitre cut



14 The mitre cutter is angled at 45°; a sharp blade is essential



15 Use a modified marking gauge to define the corner of the cut-out



16 For a professional finish, apply parcel tape at the back

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Hall of fame

GORDON WARR



The hall mirror is one of the most traditional items of furniture in many homes. Gordon Warr has given the whole idea a modern makeover

It's a natural instinct to check your appearance before going out, so a mirror in the hall is a useful feature. Combine it with a slim shelf for gloves, keys and the mobile phone, and it's twice as handy.

I've based this little unit on a standard-sized mirror from one of the DIY sheds, with square edges and pre-drilled at each corner. Mine measures 600 x 450mm.

Design features

I used some mahogany for the mirror frame and shelf, with the main frame biscuit-

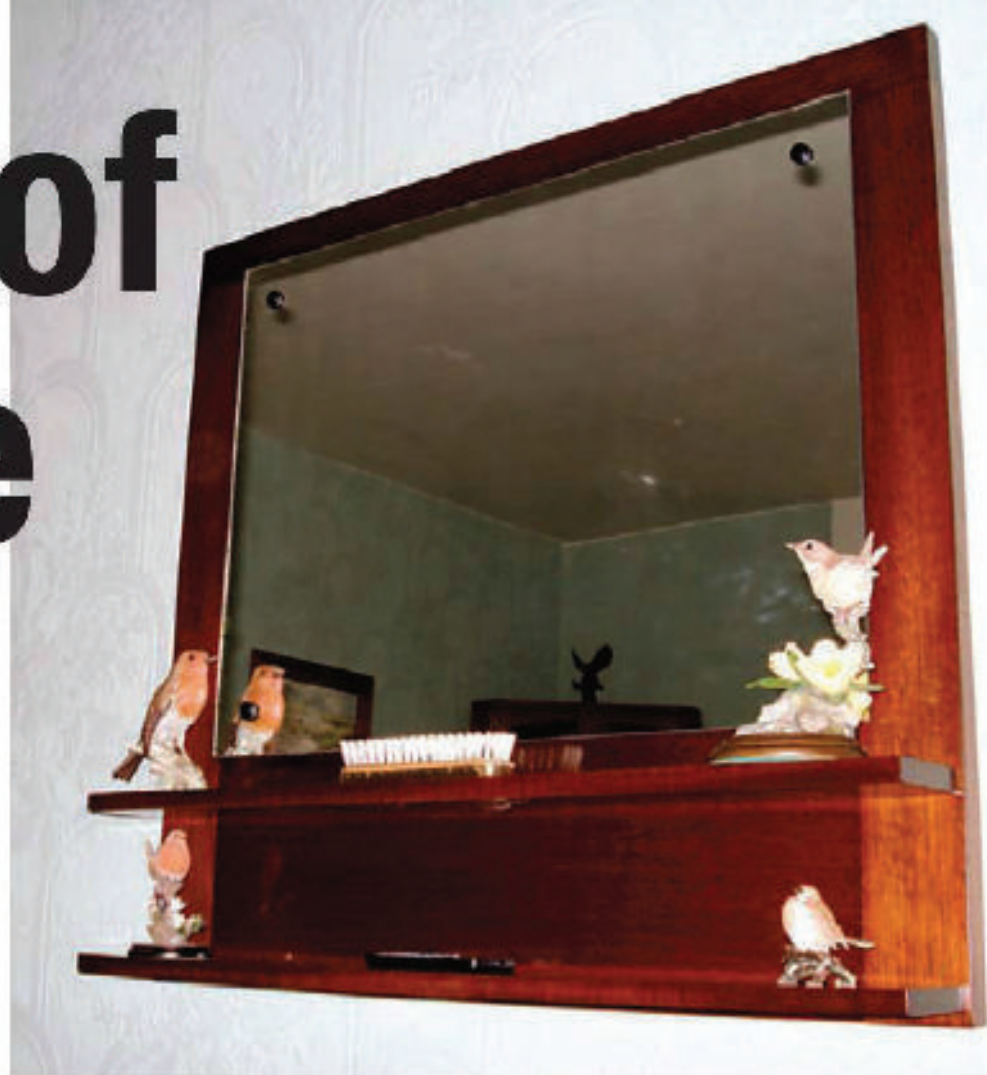
jointed. I decided to recess the mirror into rebates so its face would be flush with the wood, but this isn't an essential feature and you can mount the mirror on the face of the frame if you prefer. This will simplify the work, since the only really satisfactory way of forming the rebates is after assembly, using a router with a rebating cutter.

First steps

I started the project by preparing the six main pieces to the widths and thicknesses given in the cutting list, photos 1 and 2.

Then I squared all the ends, photo 3. Note that while the wider bottom rail fits between the stiles, the upper one rests on top of them. The main reason for this arrangement is that it allowed me to use No 20 biscuits throughout. Biscuit jointing is ideal for a project like this, since the joints carry very little load.

Very little marking out is required – just an indication of the joint positions, then a quick pass with the biscuit jointer, photo 4. It's then a simple matter to insert the biscuits and glue up each joint, photo 5. I



1 Start by facing the two stiles



2 Thickness the bottom rail...



3 ...and trim its ends off square



4 Cut the slots with the biscuit jointer



5 Add the biscuits and glue up the joints

HALL MIRROR CUTTING LIST

All dimensions are in millimetres

Part	Qty	L	W	T
Stiles	2	660	70	25
Top rail	1	745	45	25
Bottom rail	1	605	195	25
Shelves	2	745	25	15

You will also need about 600mm of 60 x 20mm softwood for the corner piece.



6 Cramp up the frame and leave it to set

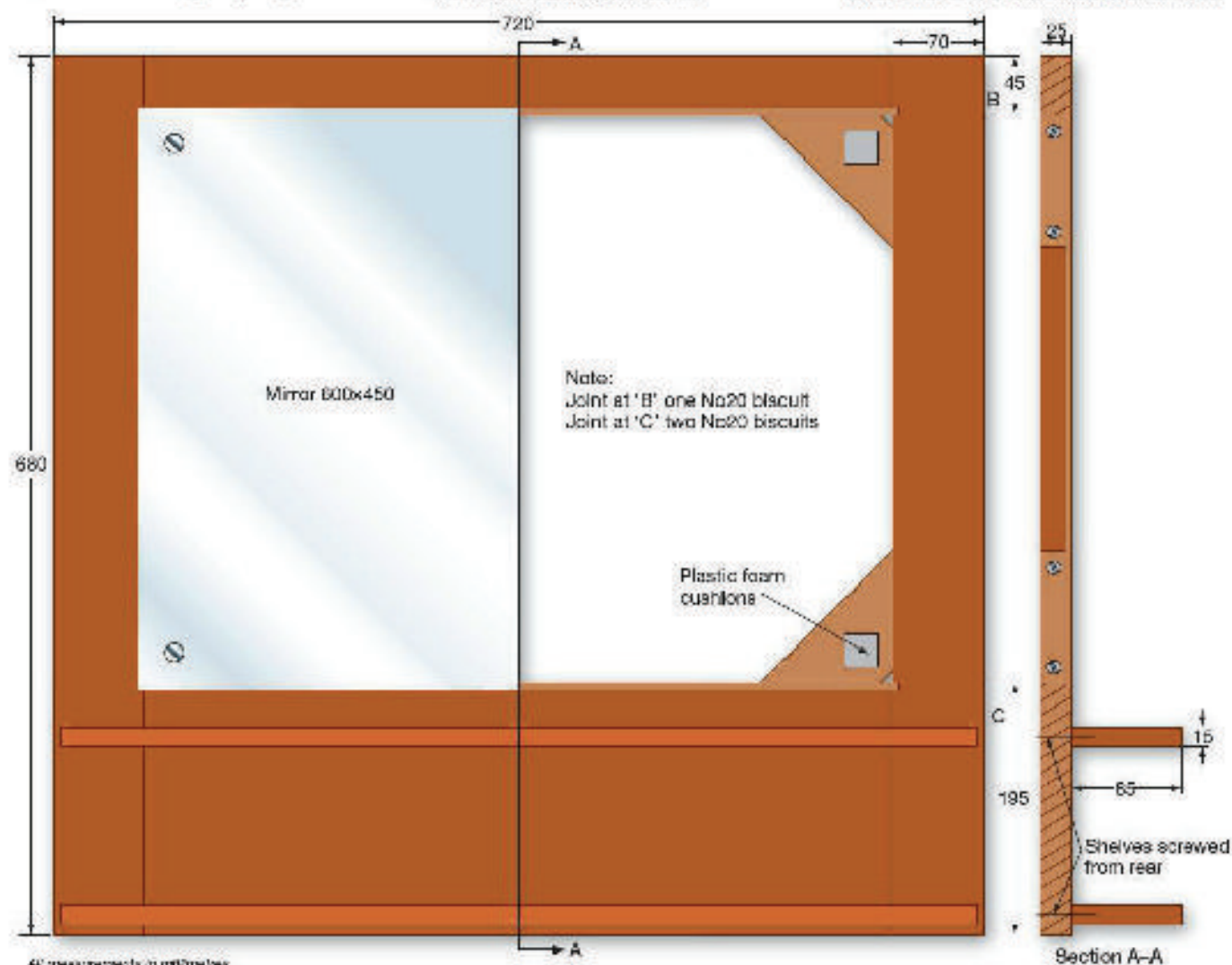


7 Trim off the projections at each corner

then assembled the frame, cramped it up, checked it for square by measuring the diagonals and put it aside to dry, photo 6. Make sure you wipe away any glue squeeze out with a damp cloth as soon as it occurs, to stop it soaking in where it's not wanted and spoiling the finish.

Trimming the frame

This method of assembly leaves four projections (called joggles in the trade) on the ends of the top rail and the lower ends of the stiles. I zipped these off on my circular saw, photo 7, leaving the ends flush, and used my smoothing plane to get





8 Rebate the inner edges to take the mirror.



9 Check that the mirror fits in the rebate.

all the outer edges level and smooth.

The faces of the frame still needed cleaning up, a job soon completed with a combination of hand and power sanding.

This stage also included lightly rounding over the corners.

Forming the rebate

I formed the 9mm wide internal rebates all round the frame using a rebate cutter in my router table, photo 8, making it 2mm deeper than the thickness of the glass. This allows for small squares of foam to be fitted in the corners between glass and frame,



11 ...and glue one into each frame corner.



12 Drill clearance holes and screw each block.



10 Cut four triangular corner blocks...

acting as cushions to avoid any risk of the mirror cracking as it is screwed into place. A quick check for fit confirmed that everything was in order, photo 9.

Adding corner blocks

I cut the four triangular corner pieces that provide the mirror fixing points from softwood on my table saw. The top two blocks also act as points of support when the unit is hung on the wall. Their precise size isn't critical; just cut them to be a snug fit in the corners, photo 10. I glued them into place first, photo 11, then when the

glue had set I drilled clearance holes through them, photo 12, and screwed them to the frame.

Adding the shelves

The two shelves are simple mahogany rectangles. After cutting them to size, I sanded them smooth, photo 13, and rounded over the corners and ends by hand, photo 14. They are attached to the frame by screws driven into their rear edges for an invisible fixing. I then marked up and drilled the frame, but didn't attach the shelves at this stage.



13 Sand the two shelves smooth...



14 ...and round off the ends by hand



15 Wipe on the mahogany stain all over



16 Then apply two coats of button polish

Applying the finish

After a final light sanding all over, the frame and shelves were ready for finishing. I started by applying a fairly dark mahogany stain, photo 15, and left this to dry overnight. This was followed by a couple of coats of button polish, photo 16. I then 'bodied up' the finish using the same polish, applied using a rubber.

I continued this until I had achieved a good build-up of finish, flattening down as the work proceeded. I replaced circular movements of the rubber with straight ones along the grain, diluting the polish progressively with meths until the surfaces were bright and free from blemishes.

Mounting the mirror

Before fixing the frame to the wall and mounting the mirror, I drilled clearance holes through the two top blocks. I then stuck a small foam pad to each of the corner blocks with contact adhesive, photo 17, and screwed on the two shelves through their pre-drilled holes, photo 18.

With a helper holding the frame level on the wall, I marked the positions of the two fixing screws with a bradawl, photo 19. I then lifted the frame down, drilled and plugged the holes in the wall and screwed



17 Glue a foam pad into each corner



18 Screw the shelves on through the back

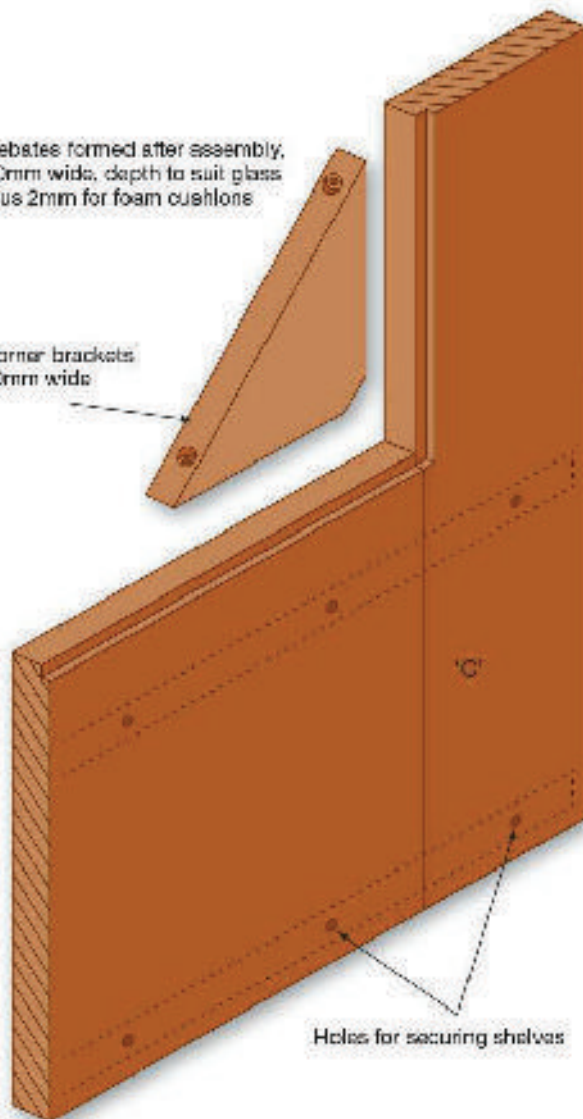
the completed frame into place.

Finally, all that remained was to offer up the mirror into its recess, photo 20, mark and drill four pilot holes and use mirror screws to attach it to the corner blocks.

Rebates formed after assembly, 10mm wide, depth to suit glass plus 2mm for foam cushions

Corner brackets 60mm wide

Holes for securing shelves



19 Offer up the frame and mark the holes



20 Fix the frame in place and add the mirror

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KREG R3 pocket-hole jointing system

WHAT'S NEW

Pocket-hole joinery originated in the USA and Kreg have always been the big name in it. Their latest jig is the R3, which can joint material from 12 to 38mm thick.

The core of the system is the jig body with its two hardened steel drill guides, **photo 1**. This is attached to the workpiece by means of screws or a standard clamp. Two adjustable plastic sliders on the sides of the body control the position of the drilled holes and are set to the thickness of the wood to be drilled. A lip on the end of each slider aligns the jig with the edge of the workpiece.

The special drill bit is set by positioning a collar on the shank according to the thickness of the material to be drilled, and is locked into place with an Allen screw, **photo 2**. The jig is clamped to one of the workpieces and holes are drilled at an angle, **photo 3**. Kreg recommend a drill speed of at least 2000rpm to give clean holes and longer drill bit life. This rules out most cordless drills, but these come into their own when driving the screws.

The drilled piece is joined to its mating piece with special self-tapping screws, driven with one of the two square-headed bits provided, **photo 4**. To ensure that the faces of the workpieces are level, and to minimise sanding, a face clamp can be used to hold them together while the screws are driven.

Note that only one part of the joint is drilled. It's essential for an accurate joint that the mating edges should be absolutely square. If they're at an angle, the screws will pull the joint together at that angle.

That is nearly all there is to pocket hole joinery. The only other thing is that the holes can be plugged with user-cut or bought plugs. These are glued in place and flushed with saw and sander, **photo 5**. If the holes are to be visible, the plugs can be of contrasting timber to make a feature of necessity.

The Kreg R3 Pocket Hole Jig costs £32. The kit comes with a good instruction manual, which answers most of the questions raised about this form of joinery. Birmarc ☎ 01926 884440 www.birmarc.com



1 Setting the jig to the thickness required



2 Setting the drill collar against the scale in the case



3 Drilling pocket holes in the workpiece



4 Driving screws by hand or with a cordless driver



5 Shaped plugs conceal the screw holes



3 Screw the sole plate through the floorboards into the base frame



4 Fit temporary supports to keep the corner studs vertical

Garden room

1 The simple base frame has extra bracing across the diagonal

KEITH SMITH



This attractive garden building is built to a far higher standard than your typical garden shed. Keith Smith explains how he made it



2 Fit the floorboards overlaid at the diagonal and brim them to fit

which is quite small for a shed. To get the maximum storage space along the walls I opted for a diamond shape, which allowed me to create two unobstructed walls, each 2.3m long.

Planning the build

This sort of building lends itself to modular pre-fabricated construction, where each panel is made in the workshop and then screwed together on site. However, I had to build this on my own and I wouldn't have been able to move such heavy panels safely.

I already had a large paved area on which I'd always intended to build a shed. For an easy build it's vital that the base is level; mine wasn't, and this caused me a few problems later in the build.

The framework

The shed is constructed on a wooden base made from 100 x 50mm Tanalised timber. This is covered with tongue-and-groove flooring and a 50 x 50mm framework is

Although this building was destined to be used as a garden shed, its exposed location and the need for the contents to remain completely dry meant that it's constructed far more robustly than a traditional shed. With insulation fitted between the studs and some internal cladding, it could easily be adapted into a modern garden room and be used as a home office or playroom. Remember that if you plan to do this, you must incorporate a vapour barrier (polythene sheet) between the internal cladding and the insulation.

To comply with my planning permission I had to keep the volume below 10cu m.



5 Adding the head plates makes the structure reasonably stable...



6 ...but fitting the sheets of OSB really stiffens up the structure



7 The head plate above the door takes the weight of the projecting canopy



8 The boarding is complete; the window openings will be cut later



9 Staple the breathable roofing felt to the walls all round



10 Fix treated vertical battens to the studs, with two at each corner

built on top of that. The frame is then clad with 8mm OSB (oriented strand board) which is covered with breathable roofing felt; I used Rubbershield Pro, which had been recommended by a builder friend.

This type of felt is very expensive for DIY use, as it comes in such large rolls; my 50 x

1.5m roll cost over £100. A cheaper option would be to use underslatter's felt or even building paper, but whilst these will keep the water out they form an impermeable layer. This means that condensation can form on the internal surface and encourage any timber in contact with it to rot.

Vertical 60 x 25mm Tanalised battens (roofing laths) are fitted over the felt to coincide with the wall studs; these will provide an air gap between the felt and the 100 x 19mm matchboarding which forms the outer skin of the building, helping to prolong its life.



11 Screw the two ladder rafter together...



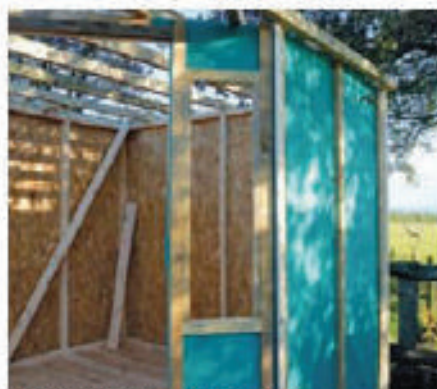
12 ... and fit one at each side of the building with joists in between



13 Add an extra diagonal brace at the front to stiffen the overhang



14 Frame the window openings between the battens with roofing lath



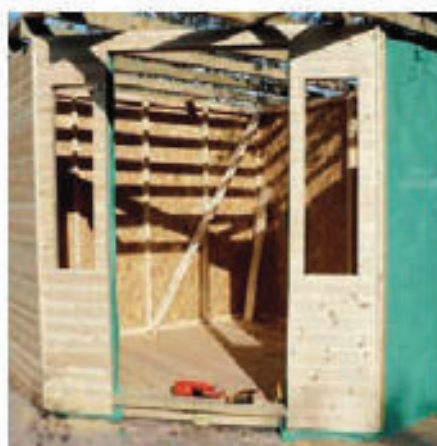
15 Cut out the window openings in the OSB sheet with a jigsaw



16 Fit a square corner fillet to the rear corners of the building



17 The angled fillet for the front corners is an awkward shape to machine



18 Start fixing the cladding at the top and work downwards



19 Add the tongue-and-groove roof boards and clad the soffits

The roof

The roof is made from 100 x 50mm Treated timber which I have tapered down to 50mm to form the fall. The roof overlaps the walls and projects over the door to form a small canopy. To facilitate this, I made two ladder rafters to support the overhang. The roof is boarded with tongue-and-groove softwood flooring and covered with three layers of roofing felt.

Assembling the base

For the base I made a simple sub-frame; the joints are not quite halving joints, so that the timbers running in one direction are in contact with the ground whilst the timber running at 90° supports the floor. This ensures there is a 25mm gap under the floor, allowing a good air flow and preventing water from being trapped. The



20 Nail the bargeboards into place; a nail gun saves a lot of time



21 Fit a verge drip batten along the top edges of the bargeboard...



22 ...except along the back wall, where it's below the roof overhang



23 Nail angled fillets to the roof edges to slope the felt upwards



24 The door and window framing is fitted proud of the cladding

diagonal corner has added bracing, photo 1. The base is boarded with tongue and groove softwood flooring which I screwed down to the base, photo 2.

Erecting the walls

The studding is made from untreated softwood. I screwed the sole plate (sill) to the base, then skew-screwed the studs to the sole plate, photo 3. As I was working single-handed, I fitted a temporary brace to support each corner stud, photo 4. Once the head plate is fitted, the structure is reasonably rigid, photo 5, and I was able to fix the OSB sheets to the studs, photo 6.

I then framed up the diagonal wall section which will house the door and windows. I've increased the size of the head-plate to 100 x 50mm, photo 7, as this will take an additional load of the projecting roof. I covered this section with OSB, photo 8, leaving the window openings to be cut later. I then sheathed the OSB with breathable roofing felt which I stapled in place, photo 9, before fixing the treated

vertical battens to the studs. These are fitted in line with the intermediate studs, photo 10; two are fitted to each corner and the door opening is also framed.

Adding the roof

A felted flat roof needs a minimum fall of 1:80, although 1:50 is better, and to achieve this I tapered each joist down to 50mm by ripping it down lengthways on the table saw. The two ladder rafters are simply screwed together, photo 11, and the short joists allow one rafter to cantilever out beyond the walls and form the canopy, photo 12. I fitted an extra brace diagonally across the rafter for extra support, photo 13. I then fitted noggins between each rafter to prevent any potential twisting.

Adding the cladding

My next job was to create the window openings. I made these by framing out between the vertical battens with roofing lath, photo 14, and then cut out the OSB with a jigsaw, photo 15.

Before I could start fixing the cladding, I had to fix corner fillets to sit 5mm proud of the cladding surface. The back corner fillets are square in section and are simply fixed to the grounds, photo 16. However, for the angled front corners I had to machine a moulding so its faces are in line with the two walls, photo 17.

I started fixing the cladding at the top and worked my way down, cutting each board to size individually, photo 18.

The roof goes on

After boarding the roof, I went on to add the soffits, again using matchboard, photo 19. I then added the bargeboards along the roof sides, photo 20.

The roofing felt needed a verge drip all round the edge, so I fitted treated roofing lath round the top edges of the bargeboards, photo 21. The rear of the shed roof takes the rainwater run-off and I'll be fitting guttering there, so I projected the roof out beyond the bargeboard and fitted a treated batten below it, photo 22. Finally the roof needed an angled fillet along each edge, photo 23, to allow the felt to run up over the bargeboards without creasing.

Finishing touches

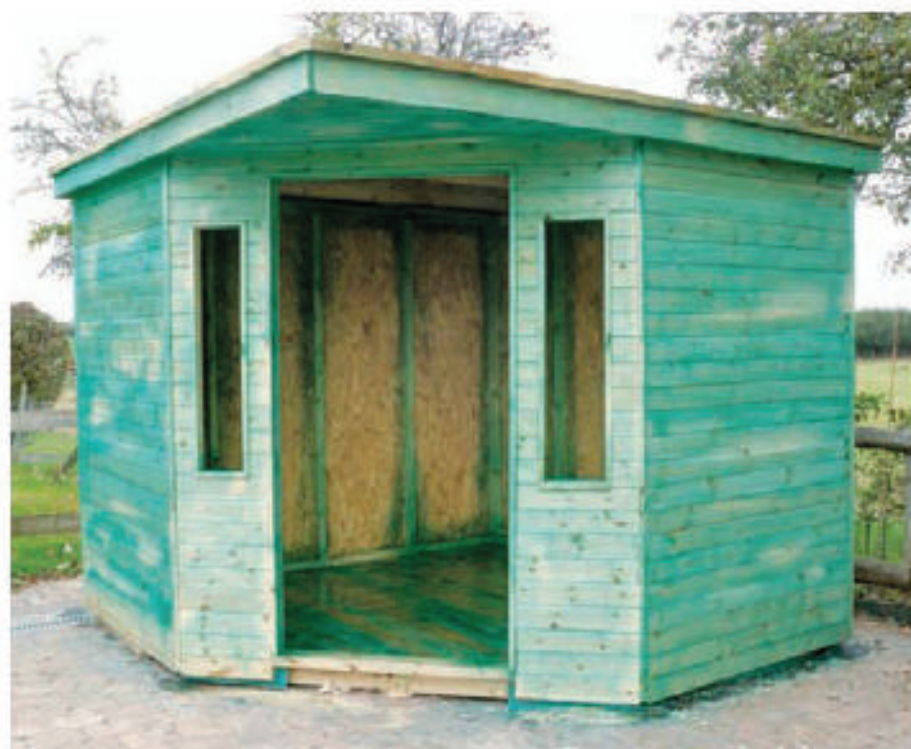
Next I framed the windows and the door opening, photo 24. I then gave the whole shed two coats of wood preservative. I used a clear preservative, but added a small amount of green preservative so I could be sure I hadn't missed any bits, photo 25.

I fitted heading into the window frames and used glazing mastic to seal in the laminated glass panes, which will help to discourage break-ins. I then gave the building two coats of Dulux Woodshades.

The last stage was to felt the roof, with folded drips secured to the verge drip battens running along the bargeboards.

What? No door?

A shed would typically have a simple lodged and braced door, but I'm going to try out a new rafter hit set from Freud, which makes it possible to make a full size glazed door on the router table. I'll tell you all about it next month!



25 Tint your clear preservative so you can see any parts you've missed

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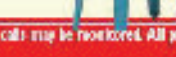
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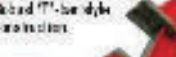
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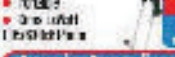
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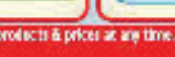
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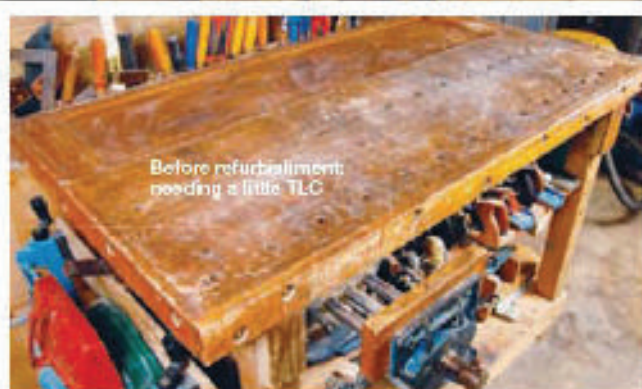
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Bench-top makeover

IAN TAYLOR



Ian Taylor gives his tatty old workbench a new lease of life with a fast and easy refurbishment.



I couldn't avoid it any longer: my workbench needed help. It had been looking the worse for wear for a while and something needed to be done. I have to admit that I hadn't been taking as much care of it as I should have, so its decline had accelerated in recent months. It was time to take remedial action.

Quick refurb

This type of bench is designed to be fairly straightforward to refurbish, and so less than a day's work can bring it back close to its new condition. The top is laminated from 19mm plywood, while the main work surface and the tool well are clad with 'sacrificial' top layers of 6mm plywood. The front and end edges are finished with hardwood lipping. When it gets a bit too battered, bruised and stained, replacing these components brings the top back to an as-new state.

My bench has evolved through several incarnations. The current version has a working surface laminated from three thicknesses of 19mm ply, while the tool well has two thicknesses – a bit of overkill for its function, but it does give it extra weight and stability.

The stand is a simple pine framework with halving joints connected by coach bolts, so it can be dismantled if I ever need to move it. The end frames are braced with diagonal steel bars, giving excellent rigidity. There are two full-depth shelves to keep tools close to hand: planes and sharpening kit are conveniently stored on the upper shelf, and heavier and less frequently used items are on the one below.

Firmly-fixed lippings

The edge lipping is fixed in position with coach bolts, recessed into counterbored holes. Since screwing into the edge of plywood doesn't give a very sound fixing, I glued turned beech plugs into 20mm holes drilled in the end grain of the laminated top, photo 1. This still involves end grain screwing, but the beech gives a pretty solid fixture, and anyway there isn't much stress on these lippings.

The front and right-hand end lippings also form the stationary jaws for the two vices. To allow this, the stationary vice jaws need to be rebated into the front edges of the top, photo 2. The bench dog holes in the top are 19mm diameter and take either Black & Decker or Administer dogs.

Ready-made templates

I didn't need to do any measuring for this refurbishment, since I could use the old parts as templates for drilling the holes for the coach bolts and benchdogs, photos 3-5. I left the lipping slightly wider than the finished dimensions so that once they were screwed in place they could be planed flush with the top. The 6mm ply top is simply pinned in place, photo 6, and the pins set below the surface with a nail set.

Stiffening the top

In its earlier life I noticed the top sagging a bit in the middle, so I added 90mm x 40mm softwood bracing beams bolted through the benchtop to the underside of the working area, photo 7. Since I put them in, the top has stayed totally flat. All the bolts through the top (for mounting the vices and the bracing beams) are recessed into counterbored holes which are each plugged with a hardwood cap so that they don't 'telegraph' through the thinner ply facing. The plugs aren't glued in place, so the bolts can still be accessed if necessary.

Now, after just one day of attention, the bench is ready for another decade of woodworking service.



Beech plugs give a firm fixing for the edge lippings



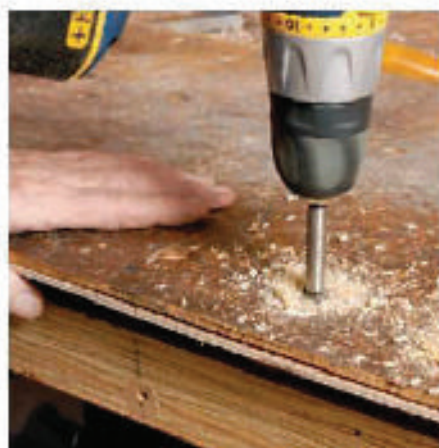
The vices are rebated into the top before fitting the lippings



Using the old lippings as templates for drilling the new bolt holes



Counterboring the holes for the heads of the coach bolt



Again, the old top can be used as a template for the bench dog holes



The pinned 6mm ply top can be easily replaced in the future



Bolting bracing beams under the top prevents it sagging

FINISHING OFF

Applying a finish isn't strictly necessary, but it does create a barrier from glue spills and splashes. I opted to wipe on two coats of oil/varnish mixture, which is fast and easy to apply. Repeating this every six months or so keeps the surfaces protected and looking good.



A couple of coats of an oil/varnish mixture gives adequate protection

All glued up!

KEITH SMITH



They say the Devil finds work for idle hands, so He asked Keith Smith to put woodworking adhesives to the test. Here's the first part of Keith's report



1 I've made a large number of test joints using the different adhesives on test



2 The joints on my greenhouse tanlight failed within three years – a very poor performance over such a short timespan

Adhesives will usually form just a tiny percentage of the overall cost of a project, but if a glued joint fails it can often ruin all your hard work. Picking the right adhesive is as important as picking the right timber. However, it's one of those things that most of us take for granted as we automatically reach for the PVA. But with so many adhesives available, are there any better alternatives?

I've been taking a look at some of the more readily available products, checking out their properties, how easy they are to use and what they cost. I've also made up some test joints, photo 1, and I'm planning to leave them exposed to the elements for at least a year to see if there is any degradation.

Early failure

My current interest in wood adhesives was sparked off when I noticed I had a glue line failure in some joints made back in 2004



3 Lightly abrading the surfaces you're sticking with 100 grit paper gives a better bond



4 Colloidal silica is one of the fillers that can be used with epoxy resin adhesives

KNOW YOUR ADHESIVES

PVA (POLYVINYL ACETATE) adhesive is formulated for both indoor and outdoor use. Also referred to as white glue, it dries quickly and is colourless when cured. PVA adhesives remain flexible even when fully cured, and this can allow the joint to creep or move over time.

PROS: Easy to use, inexpensive, non-toxic, relatively odourless, good shelf life, cleans up with water, gives a clear glue line, water-resistant formulations available, tried and tested over many years

CONS: Short open time, joints may creep



PVA adhesives are available for interior and exterior use

POLYURETHANE ADHESIVE is a water-resistant multi-purpose product. It reacts with moisture to cure, so one of the bonding surfaces may need misting with water. It foams to fill gaps, but the foamed adhesive has little strength.

PROS: No mixing, multi-purpose, gap-filling

CONS: Foams, joint won't withstand repeated wetting and drying, stains skin

RESORCINOL PHENOL FORMALDEHYDE ADHESIVE comes in two parts, a resin and a hardener, which mix to a dark red colour. It is fully waterproof and can be used below the waterline; furthermore it is resistant to mould and all known solvents. It's quite expensive but is the easiest fully waterproof glue to obtain and use.

PROS: First choice when a completely durable joint is needed, fully waterproof, mixed glue remains workable for about 3 hours

CONS: The most expensive glue on test, very dark (almost red) glue line, unpleasant odour



Resorcinol phenol formaldehyde adhesive comes in two parts, a resin and a powder hardener

ALIPHATIC RESIN ADHESIVE is a PVA adhesive with added aliphatic resins. Also known as yellow glue, it has a higher initial tack than PVA. It sets by a chemical reaction which, even with the non-waterproof formulations, can't be fully reversed with water. This type of glue is particularly sensitive to the joint being disturbed as it cures.

PROS: Easy to use, high initial tack, inexpensive, good shelf life, usually food-safe, cleans up with water when wet

CONS: Cream to light brown glue line, joint weakened if moved during curing



Titebond is available in three formulations; I mainly use Titebond 3

UREA FORMALDEHYDE ADHESIVE comes as a powder and needs mixing with water in accurate proportions to work well. It has a relatively short shelf life and I always mix a sample the day before and make sure it will set hard and opaque, as this is the only reliable way to ensure that it has not gone off.



Careful mixing is vital with urea formaldehyde adhesive; note that I put the purchase date on the lid

PROS: Sets hard with a clear glue line, good for veneering

CONS: Relatively short shelf life, needs mixing accurately for best results, can be relatively brittle, water-resistant rather than waterproof

EPOXY ADHESIVE comes as a resin and a hardener. However, for most woodworking joints one of the various fillers available must be added to the mixed adhesive. Accurate and careful mixing is vital.

PROS: Sets clear, very adaptable multi-purpose adhesive and filler

CONS: Expensive, a relatively complicated adhesive to use to its best advantage, unpleasant odour, joint line can delaminate if it is subject to repeated wetting and drying, gloves must be worn as it causes dermatitis



Pump dispensers make mixing the right proportions of epoxy resin and hardener relatively quick and easy



using polyurethane adhesive. These joints formed part of the skylight for an oak greenhouse which was featured in the June 2004 edition of *The Woodworker*. They are simple lap joints and are in a particularly exposed location, photo 2, but nevertheless it's a real worry that they have literally come apart after such a short time. I thought I'd better find out why this had happened.

Ideal conditions

What we can do to make a glued joint more effective?

- A good fitting joint is important. Some recent research has indicated that, contrary to popular belief, very tight joints aren't necessarily detrimental to an adhesive's performance.
- Temperature matters. Try to keep your workshop above 15°C when gluing up. You'll be more comfortable too!
- The moisture content of the workpieces being joined should be at a similar level.
- Sand the surfaces with 100 grit abrasive paper before assembly to key them and improve the adhesive bond, photo 3.
- If using oily woods such as teak or cedar, remove any residue from the bonding surface first with acetone.
- Although the adhesive may initially make a bond in a few minutes, most types take at least 24 hours before they're fully cured. If the joint is disturbed in this time, it can severely weaken the bond.
- Check that the adhesive you're using hasn't passed its best-by date.
- Always read the instructions!



5 These jewellery scales weigh to 0.1g – especially useful when mixing small quantities of glue

HAS MY ADHESIVE GONE OFF?

PVA adhesive will initially thicken as it ages. At this stage, it's possible to add up to 5 per cent water to bring it back to its original consistency. If it's thinned any further, the structure of the glue is altered, resulting in a weaker joint. As the adhesive ages further, it starts to form clumps; at this stage it's definitely way past its use-by date and should be dumped.

Aliphatic resin adhesives such as Titebond 1 thicken with age like PVA, but then become stringy and should be thrown away. Titebond 2 turns orange when it gets to its discard date. Titebond 3 also thickens with age; it can be shaken vigorously and if this restores its original consistency then it can be used. If it doesn't, discard it.

Urea-formaldehyde adhesives such as Extramite are powders. They should set hard and brittle, and should be opaque in thin section, as shown. If the powder is difficult to mix, it's going off; when it has really passed its useful best, it mixes to a friable powdery mass. If you're in any doubt, mix a sample and make a test joint.

Polyurethane adhesives use moisture to cure, so as long as the container isn't opened it has a shelf life of one to two years. Once it is exposed to air, it starts to cure. The reaction can be slowed by squeezing as much of the air out of the container as possible after use and storing it upside down. Then if it does start to harden, it does so away from the nozzle and as long as the adhesive remains liquid, it's usable.

If you're unsure about the condition of any adhesive, you'd be wise to throw it away; it's just not worth the risk of having a joint fail. The cost of adhesive in any project is usually minimal anyway.



Mixing adhesives

Many types of adhesive require mixing, and it's usually better to measure the component proportions by weight rather than by volume. It's surprising just how critical the proportions can be to obtain a good-quality bond. I've invested in a set of jeweller's electronic scales, photo 5; these are accurate to 0.1g, and since I've been using them I've had really good, consistent results with my gluing. I bought mine on eBay and they cost me just £11.

Left on the shelf

Most adhesives have a shelf life of between one and three years; it is difficult to be precise, because storage conditions have such a bearing on this. Glues are best stored in a cool place, certainly at less than 25°C, but bear in mind that they mustn't be allowed to freeze. It is possible to store glue in the fridge, but this is only really necessary in very hot climates or if we were to ever get a prolonged heatwave. See the panel (right) for more specific details about each type of adhesive.

■ NEXT MONTH

I'll look at specific makes of glue and make up a number of sample joints to test the relative performance of the various glues

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Web: www.henrytaylortools.co.uk





Carving with the router

Woodcarving is a skill mastered quite easily by some and found utterly daunting by others. Unfortunately I fall into the latter category. Much as I would like to master this skill, I'm aware that this will require a considerable amount of time to practise – something I seriously lack at the moment.

However, for anyone in a similar position to me, Trend have produced a very effective and easy-to-use carving system that will enable you to produce a variety of carved pictures using your router, fitted with a very cleverly designed cutter and coupled with a set of templates.

Although the choice of pictures is primarily aimed at those wanting to decorate kitchen unit door and drawer fronts, with a little imagination these can just as easily be incorporated into many other projects around the home.

Clever cutter

The secret to this system lies in the design of the cutter. As can be seen in the first

PETER DUNSMORE



Armed with a clever router cutter and a set of templates, Peter Dunsmore finds that simple carving is easier than he thought

photograph, the cutter consists of a point used to cut the wood. However, surrounding this cutter is a revolving aluminium cone guide with a 45° bevel fixed to it.

Depending on the picture you want to create, a varying number of 'MIDI' template inserts are supplied to be fitted into an 'MIDI' frame. These templates are pierced

with various slots of different widths. The idea is that the aluminium cone and cutter, fitted into a router with a ½in shank, slides along the slot.

Rise and fall

The router is kept plunged at all times as it moves along the length of the slot. The revolving bevelled cone on the cutter will slide along the slot, and as the gap widens it allows the cutter to plunge deeper into the wood. Conversely, as the slot narrows it then lifts the cutter off the timber, resulting in a cut of varying width, very much like a piece of timber carved with a carving chisel. The effect is simple, attractive and easy to create, and is certainly worth considering in a wide range of woodworking projects.

FURTHER INFO

Trend Machinery

☎ 0800 487383

🌐 www.trend-uk.com

Carving a dolphin

In this article I've used the templates to make a picture of a dolphin on two panels of a single bedhead. You may have noticed that the template inserts have a letter printed on the top edge. The idea here is that these are inserted the same way up to produce the dolphin swimming in one direction. By simply turning the templates over, the direction the dolphin faces can be reversed.

1 Sitting next to the cutter on the pile of templates are an aluminium collar and a small Allen key. These are used to set the cutter in relation to the router. Note the revolving 45° bevelled cone guide fitted to the cutter. This, and the width of the slots in the templates, control the depth of cut in the carving. At this stage it doesn't look much like a dolphin!



2 Insert the cutter shank about three quarters of the way into the router and secure it in place. Then fit the collar over the revolving cone guide. Use a straight edge to check that the point is level with the guide. If necessary, remove the collar and make a simple adjustment using the Allen key provided.

3 Before starting any carving, secure the frame that holds the templates in place on the timber to be cut. Clamps are suitable as they won't be in the way of the router. Take care, however, to check that the frame is positioned precisely where it is required, particularly if a panel is being carved and the pattern has to be positioned centrally.



4 Fit the router cutter into the first slot and switch the router on. Plunge the router down and keep it pushed down as it travels along the length of the slot. The design of the guide cone prevents the cut being made too deep. For a smooth operation, clean the router plunge guides, lubricate them with some dry lubricant, and rub some cordle wax on the router base. Repeat for the other slots in the template.

5 Although the slot may not have looked particularly impressive, the resulting cut is effective. The cut is an attractive bevelled cut that could pass for some clever carving, the main difference being that this cut is, perhaps, too perfect. In this example I've used white painted MDF to show the cuts more clearly in the photographs. The design shows up quite clearly on natural timber too.



6 This is the result of using two further templates. As can be seen, the templates may have only one small slot, but this still has an effect on the resulting picture. By simply turning the templates over, the dolphin can be made to face the other direction, but don't mix the sides up or the final picture will be a disaster! Only one more template is required to finish the picture.

7 The completed picture, creating a simple yet effective look. Try to produce a variety of other designs and patterns which are well worth a look if you're contemplating remodeling your kitchen units or starting another furniture project.



Q&A

KEITH SMITH



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

Q Can you tell me if it's safe to burn 'tanalised' timber in a wood-burning stove? I have a lot of small off-cuts and could mix them in with untreated wood. It seems such a waste to send them to land-fill.

George Davies, Monmouth

A 'Tanalised' has become an all-encompassing generic term for all preservative-treated timber. Prior to 2002, 'tanalised' timber was treated with 'tanalith' CCA, a chemical mix of copper, chromium and arsenic compounds. When burnt, the wood gives off arsenic gas, which is obviously extremely dangerous. The wood ash also contains arsenic and so it has always been extremely unwise to burn treated timber in a domestic burner. The more environmentally friendly Tanalith E was introduced in 2002 and doesn't contain chromium or arsenic.



This new preservative consists of copper, tributyltin oxide (a biocide) and boron, and is therefore much safer to burn, as the main residue in the ash is copper. However, when I spoke to the manufacturers of 'tanalith' their advice is still the same; that treated timber should not be burnt in domestic heaters or incinerators, nor be used as a cooking fuel.

Q I'm an amateur woodworker and have been collecting tools for about fifteen years. I have around sixty moulding planes, many of which need overhauling. The blades in some of the planes are stuck and I have been unable to remove them.

Do you know of a way of releasing them without damaging the plane? Also I've purchased some special sharpening stones but don't have the faintest idea as to how to use them. Can you point me in the right direction or recommend any good books on the subject?

Keith Booth, Kidsgrove

A Relatively few people use moulding planes these days, with the router having taken over due to its ease of use and speed of cut. Antique shops seem to be full of moulding planes, and I must admit I haven't used one for nearly thirty years. So it isn't inconceivable that the blades have been wedged in place for decades and this may



account for why you are having such trouble removing them.

The wedge should be shaped so that you can tap it out of the body with a small hammer. If that hasn't worked you could try to release the blade by holding the plane upside down and give it a sharp tap on the bench. Finally you could try warming the blade with a hairdryer until it is just hot to the touch; this will hopefully release any resin that has built up within the plane and release the blade.

As for sharpening this type of blade, it is far easier to do if it is held in a jig at exactly the same angle that it's housed in the body. That way you are able to keep the slipstone horizontal while honing.

There are several books on the subject and I've had "Restoring, Tuning and Using Classic Wood Working Tools" by M Dunbar; ISBN-13:978-0-8069-6670-0 recommended to me. It is quite expensive though at about £45.

Q Can you tell me if it's possible to thin woodworking adhesives, in particular PVA or 'Titebond' or any of the polyurethane adhesives?

Carl, via email

A Yes, it is possible to thin both PVA and aliphatic glues such as 'Titebond1', 'Titebond2' and even the cross-linking 'Titebond3'. However, you can normally add no more than 5 per cent water by weight without affecting the strength of the glue. If you were to dilute the adhesive further, you would risk starving the joint of glue as it would be too easily absorbed by the timber. Also be wary of adding water when veneering; the extra moisture can make the veneer swell, and when it dries the veneer is likely to split. It isn't practical to thin polyurethane adhesive, but it's possible to make it more free-flowing by placing the glue bottle in a pan of warm water.

Q I'm planning to build a timber-framed garage and will have a lot of lot of beams to cut. I've also felled a couple of small trees and would like to cut them into turning blanks, so I'm planning to get either a chainsaw or an Alligator saw to make my life easier. I've never seen a comparative review, so could you give me an idea which would be the best bet?

Alan Hilton, Stroud



A Although these machines do a similar job, they're very different to use. The Alligator saw has two sets of teeth which have a reciprocating stroke so that as one blade moves forward the other moves back. This gives a well balanced and very safe cutting action, as there is almost no chance that the blade can grab and kick back. However, it is relatively slow and, as waste is not naturally removed from the cut, the saw needs to be moved backward and forward whilst cutting. The blades last well, and when they do need replacing it's a simple process; a replacement set of HSS blades will cost about £20.

A chainsaw on the other hand is far more dangerous to use and I would always advise getting some professional training before first using one. Furthermore, a full set of the necessary safety gear will set you back about £200. A chainsaw also needs setting up and constant maintenance, something which would also be covered on a decent training course. However the saw cuts so very quickly, and the revolving teeth clear the waste away from the kerf even when cutting the greenest of wood, so performance wise it's in a different league to the Alligator saw.

The Alligator saw works well. I use mine quite a lot, and it would be my recommendation for you. However, if you have a lot of wood to cut it may be well worth getting a chainsaw. Alternatively if you don't have so much wood to cut and you are reasonably fit you could invest in a bow saw and expend some elbow grease. A 24in Bahco saw with Baker tooth blade would cost less than £20!

Q Have you any tips for trimming laminate edging? I have a laminate trimmer and use a specific bearing-guided laminate trimming cutter, but I find the bearing on the cutter sometimes marks a line on the laminate and very occasionally the cutter nicks the laminate surface. I've tried lubricating the bearing but this hasn't made any difference.

Jason, via email

CMT have recently brought out a bit which should solve the problem. The 3/8 in 1" flush trim bit has the bearing encased in a triangular piece of plastic which gives three advantages over normal trimming cutters.

- Each flat face of the bearing is 20mm long. This will prevent the bearing from following any indentations in the laminate which can allow the cutter to nick the surface.
- As the actual bearing is running inside the plastic block, it can't pick up any glue residue which might cause the bearing to freeze.
- The plastic bearing block is made from Delrin, which is comparatively soft and will not mark the laminate surface. Additionally the bit is designed to cut with a slightly negative shear angle for an improved finish.

The CMT bit is available in both 3/4 and 5/8in shanks; the 1/4in, which will fit most laminate cutters, costs £20.99 from Axminster Power Tools.



Q I want to insulate the stud walls of my timber workshop, both for heat and sound insulation. What materials would you recommend?

Bill Watt, via email

A Glass fibre is the cheapest option; 100mm thick rolls should work out at about £2 per sq m. It is good for thermal insulation and reasonable for sound insulation.

Kingspan is one make of foil backed rigid urethane insulation board currently available. A 50mm thick 8 x 4ft sheet costs about £7 per square metre. It's excellent for heat insulation and reasonable for sound insulation.

Rockwool has a similar thermal insulation performance to glass fibre but it is denser and so has better sound insulation properties. It's available as batts (semi rigid slabs) which can be friction fitted between the studs. 50mm thick batts costs about £4 per sq m. Rockwool is good for both sound and heat insulation and is my preferred method where noise is an issue.

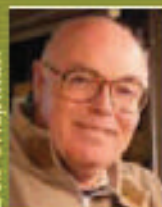
If noise is a particular problem, a dual layer approach may be a further option. Wickes sell a very dense 30mm thick rockwool slab. It's expensive at about £11 per sq m, but a layer of the dense board covered with a layer standard rockwool will provide excellent sound insulating properties.

If you have any queries you would like us to try and answer, just write to the address below or email thewoodworker@magicalia.com and we'll try and give you an answer in the next available issue. Send in a photograph or sketch if it helps and remember to enclose a stamped SAE if you want us to return your pictures.

Write to: The Woodworker Q&A, Magicalia Ltd, Benwick House, 8-10 Knoll Rise, Orpington, Kent BR6 0EL



Chris has created an unusual hourglass with five columns. He also explains the history behind the watches on board ship...



What you see isn't always what you get. Bob's elegant sycamore bowl looks plain and simple... until you turn it over to reveal the unusually textured underside



Treating yourself to a brand new chuck means facing a lot of choices. Ian Wilkie checks out the main points you need to look for... and tries out the new Patriot chuck from Robert Sorby (see right)

PLUS...
Win great prizes in our annual turning competition p65



p58



p62



p66

TURNING

Lathe projects, tips and techniques

THE PATRIOTIC CHUCK

When Robert Sorby decided not to continue marketing the Nova chuck, they looked for an alternative of the same quality. After considerable research they decided to design and make their own chuck in Sheffield, and named it the Patriot. We asked Ian Wilkie to test it for us.

This is a compact four-jaw scrollchuck. When fitted with the standard jaws and a back screw insert, it measures 100mm dia by 75mm long. The chuck comes with a standard 50mm set of jaws already fitted, the appropriate insert to match the lathe spindle, an operating T bar and a wood screw accessory.

The chuck is totally enclosed at the back with a plate which can be removed for cleaning, and the front edge of the body is protected with a silicon rubber safety band. The jaws have a 15° dovetail both inside and out, together with two grooves on the inner surface to give extra grip when longer spigots are used. The maximum movement of the jaw slides is 25mm, and the built-in stops prevent the jaws from working loose. The scroll is operated by a 8mm hex key with a ball end.

When you receive the chuck, try the insert alone on your lathe spindle first, making sure that the insert thread and the lathe spindle are clean and oiled. The insert should screw on easily right up to the register without any force.

Once you're happy with the insert, screw it into the back of the chuck. Tighten up the grub screw on the side of the body and now the chuck is ready to put on the lathe. The chuck is compact and

has a very smooth action. The jaws are well engineered and grip the work effectively, and although the internal grooves will mark a spigot they do give an excellent grip.

When the chuck came for test it was supplied, as requested, with an insert to fit the Myford Maestro lathe. Unfortunately the insert wouldn't fit the lathe spindle because the parallel register was too small to go over the spindle register. Robert Sorby were very quick to provide a replacement, and this screwed on perfectly.

However, I had another problem when I tried to remove the hex-headed screws to change the chuck jaws because they had been inserted with too much force. This required considerable effort and damaged the screw heads. When I brought this to Sorby's attention, they assured me that in future the screws would not be tightened so much. I would like to see a better quality hex screw used and if possible one with a larger head.

Throughout the test the chuck rotated accurately without vibration. This is not an indexed chuck and it would be a good move if Sorby added an indexed back plate as a future optional accessory because there are a number of lathes that do not have built-in indexing.

Summary

It's really heartening to see a British-made chuck of this quality, and I know many woodturners will be delighted to have the opportunity to support a Sheffield-made product. It's available from Turners Retreat.

Robert Sorby ☐ 01142 250700 ☐ www.robert-sorby.co.uk

Turners Retreat ☐ 01302 744344 ☐ www.turners-retreat.co.uk

PRICE: £140



Turn! Turn!



There's a time to every purpose under heaven

Our lives are now so regulated by digital clocks that we'd probably be completely lost without them. It's difficult to imagine what it must have been like when, before the arrival of the pocket watch and the bracelet clock, the hourglass was the only practical way of keeping time in the home and the workplace.

On the watch

It was still playing a vital part at sea until the late 19th century. Ship's time was divided up into six four-hour watches, reckoned from midnight and measured by a large hourglass which was set outside the door of the captain's cabin and closely guarded. The half hours of the watch were measured by a smaller hourglass which was turned each time it emptied, at which point the ship's bell would be rung. One bell marked the end of the first half hour of the

watch, two bells the end of the second and so on. This is how the ship's time came to be known as the bells.

At the same time, on land, the parson in his pulpit would be able to regulate the length of his sermon by keeping his eye on a large hourglass, safe in the knowledge that he was not short-changing his congregation. And the cook in her kitchen could time anything from a boiled egg to a suckling pig roasting on the spit.

Preparing the parts

The timber required to make the frame for this 115mm tall glass mechanism consists of two elm discs 95mm diameter by 20mm thick and five 140mm lengths of 20mm square stock, **photo 1**. The dimensions obviously depend on the size of the hourglass, so adjust them accordingly if yours is a different size.

Turn!

CHRIS CHILD



With the Byrds' famous song in mind, Chris has created this

unusual hourglass with five turned columns – one for each Byrd

Making the top and base

To hold the work on the lathe, I use double-sided tape to attach the discs to a faceplate. This holds the disc of wood firmly in place without causing any marks in the finished workpiece. If necessary, smooth off one face of the disc with a plane to provide a flat surface for the tape to stick to, and for extra grip, apply the tape to the faceplate of the lathe as well.

This enables you to burnish both surfaces down with a screwdriver handle. When these two sticky surfaces are brought together and cranked up tight in the bench vice, the result is a very strong bond.

Use the toolrest to guide a 1in round-nosed scraper across the face of the disc to level off the surface, **photo 2**. After each pass, test the surface with a straight-edge for flatness.

Marking out the discs

To mark out the positions of the columns, first draw a 67mm diameter circle onto the face of the disc with a pencil and then divide this into five equally-spaced positions with a pair of compasses spread to

THE TOOLS YOU'LL NEED

To make the hourglass frame you'll need the following kit and materials:

- ¼in roughing-down gouge
- ¼in skew chisel
- ¼in parting tool
- ¼in beading tool
- ½ bowl gouge
- ¼in spindle gouge
- 1in round-nosed scraper
- a pair of spring callipers
- a pair of odd-leg callipers
- a pair of compasses
- a faceplate
- a home-made screw chuck
- double-sided carpet tape

approximately 35mm, photo 3. Then prick the five points with a Bradawl, so they won't be lost after you use a sanding block to flatten off the disc surface.

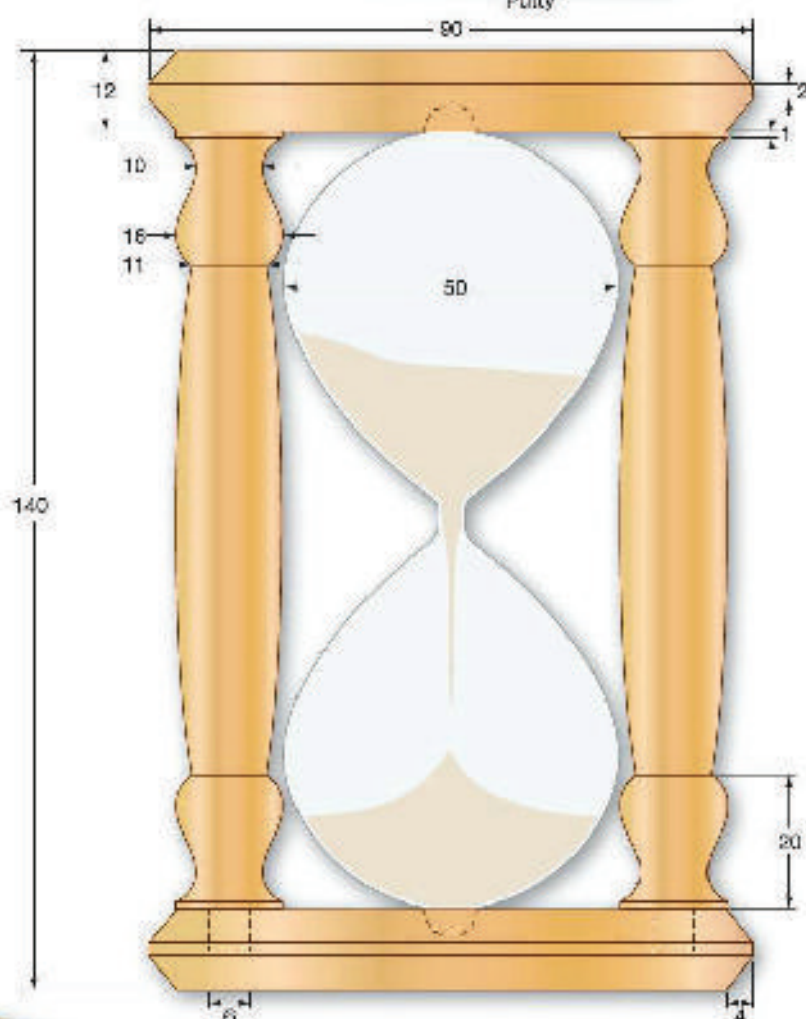
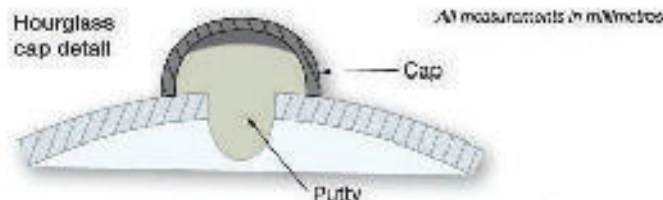
To enable the disc to be held on its reverse side, drill a pilot hole for a screw chuck in the centre of the disc. Drill the hole as deep as possible without going through the back of the plate, photo 4. To remove the plate, push at the back of the disc with your hand. The bond produced with the double sided tape can take a bit of breaking, but it will gradually weaken with strong continuous pressure. The plate is then reversed and fitted onto the screw chuck.

Making the screw chuck

I made this handy wooden chuck with a dovetail spigot so it could be held in the chuck jaws of my master chuck. The self-centring dovetail enables it to be quickly and easily re-centred when it's needed again.

For this kind of chuck to work properly, it's essential that the screw is positioned along the axis of the chuck body. Drill the pilot hole first, all the way through the block of wood, and fit a short Pozidriv screw in one end before mounting this between centres. Use a Pozidriv drive bit held in a Jacob's chuck as a drive centre to propel the work, and use the revolving centre placed in the other end of the pilot hole to support the work as it goes round. Cut the dovetail and shape the body of the chuck.

For my screw chucks, I use No 6 to 10 size Spax screws. These are precision-machined from hardened steel and have serrated threads that cut straight.



1 The naked hourglass with the disc and column blanks



2 Use a round-nosed scraper to flatten off the face of the discs



3 Mark out the five column positions on the discs with compasses



4 Drill a pilot hole for the screw chuck in the centre of each disc



5 The rear of the screw chuck showing the screw locking plate



6 Reverse the blank and wind it up tightly on the screw chuck



7 Trim the rim square and true, slicing it from both directions



8 Slice across the top surface of the disc with a gauge



9 Form the top chamfer, then cut the under-chamfer in the same way



10 Drill out the dowel holes for the five columns in each disc



11 Reduce the blank to a cylinder and cut a shoulder at one end



12 Use odd-leg callipers to fix the total length of the column



13 Slice a V cut at each end of the column with a skew chisel

into most woods without the need for pre-drilling. Wind the screw through the back of the body of the chuck until it emerges at the other end of the pilot hole. Cover the head of the screw with a thin metal plate. Alternatively, fashion a locking plate to prevent the screw turning round in the chuck body photo 5.

Trimming the discs

With the disc blank held securely on the screw chuck, photo 6, trim the rim square and true with the small 1/4in bowl gouge, starting the cut from one corner and feeding the tool slowly across. The bevel of the gouge must be held in line with the direction of the cut, and to avoid fraying the corners I stop halfway across the rim and then work in reverse, photo 7.

Flatten the top surface of the disc with the round scraper as before, or use the gauge, photo 8, taking a light slicing cut to avoid dislodging the work from the chuck.

Form the chamfer on the rim with the gouge, worked backwards towards the edge. Then form the under-chamfer in the same way so the cut is performed with the grain, leaving the fibres smooth, photo 9.

Drilling the discs

After sanding, remove the disc from the screw chuck and drill the holes for the balustrades. The lathe can be used for this task by mounting a right-angled backing plate on the tailstock of the lathe and lifting a drill into the headstock. I hold the disc against this support and wind in the tailstock to drill the holes for the dowels at the ends of the columns, photo 10.

Turning the columns

Before putting one of the column blanks on the lathe, I prepare all the blanks beforehand by centre punching the ends with the four-pronged drive centre. Each one can then be mounted without removing

the drive centre from the lathe's headstock spindle each time.

Turn each block to the diameter of the outer width of the balustrade, using a roughing down gauge. With the toolrest set parallel to the work you can slide your knuckles against it, using it like a fence so that the spindle thickness is kept the same all the way along.

You need to wear eye protection when performing this operation, because you'll be knocking directly into the line of fire of the shavings and splinters as they fly off. There's also a danger that a thin spindle like this can fracture, especially if you use waxy timber containing areas of short grain.

When you have checked the diameter with a pair of spring callipers, move the toolrest closer, ready for turning the shape of the balustrade.

Shaping the columns

Part in with a heading tool to form a shallow shoulder at one end, photo 11. Mark out the length with a pair of odd leg callipers, photo 12. The length of the balustrade is determined by measuring the height of the hourglass, leaving out the two bungs at each end. Part down at the other end to form an over-sized dowel.

The first stage in making the decorative mouldings at each end of the columns is to use a 1/2in skew chisel to slice two V cuts, photo 13. My real skew chisel is ground with a very acute 20° overall angle and then honed to a razor sharp edge on an oilstone.

Use the tool with the longest point of the blade resting on the toolrest, and feed the

point into the surface of the wood at a slight angle just to one side of the line. Only the point is allowed to make contact with the work; the rest of the blade must be kept clear at all times or the tool will be dragged sideways out of control.

Repeat the same cut, mirror fashion, on the other side of the line. The point of the tool should intersect at the bottom of the previous cut as the waste section is removed. Enlarge the V by taking further slices with the skew.

Forming the tulip

When rounding off the corners of the V cut to the convex curve of the tulip shaped moulding, photo 14, I use a standard parting tool as it's much easier to handle than the skew chisel. Place the tool at right angles to the axis of the work, with the corner of the tool resting on the crown of the moulding. With the handle braced against your body, twist the handle using mainly a wrist action and roll the tool so the corner of the tool's edge cuts away the shoulder. With subsequent cuts, more of the shoulder is removed so that a semi-circle shape is formed.

Form the hollow of the ogee using a 3/8in spindle gouge. Slice down from each side of the cove with the tool on its side, and twist it so that it pans out at the bottom of the curve, photo 15.

Tapering the centre

To form the tapered middle section of the column, return to using the freshly sharpened skew chisel, photo 16. To avoid catching and damaging the bulbous end of the tulip, bring the lower end of the cutting edge to meet junction of the moulding. It pays to examine the surface of the work for signs of rough grain just before you reach the desired diameter. Then, if necessary,



14 Round off the bottom of the tulip shape with a parting tool



16 Form the round taper of the middle section with the skew chisel

you can improve the finish by honing a sharper edge on your chisel and reducing your cut to the finest hair.

When it comes to making the other matching columns, I use odd-leg callipers again to transfer the dimensions accurately from one spindle to another, photo 17.

Sanding on the lathe

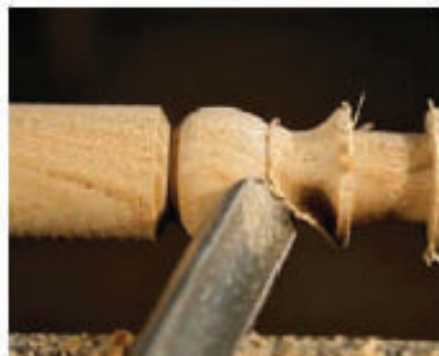
I use aluminium oxide abrasive which is resin-bonded onto a flexible fabric backing. It can be tightly folded or rolled up, to work in and out of tight corners and hollows. On the lathe, fine detail can easily be rubbed away during the sanding stage unless you take special care to avoid bending the abrasive over the corners of the mouldings.

Restrict the use of coarse 60 grit abrasive to flattening off the plates and levelling out any undulations on the tapers of the columns. Besides, by using the cutting techniques described above, you shouldn't need to use anything coarser than 200 grit for the decorative detail. Then fine grits will remove the marks of the coarser cloth and give you a suitable surface to polish.

Waxing and polishing

I gave my hourglass a simple coat of soft quick drying wax, being careful not to get the wax in the dowel holes which would stop the joints from sticking together.

After sanding and waxing, trim the dowels down to the finished drill size, photo 18. Make them as accurate as you can, because the final assembly of the hourglass is made much easier if the columns are a right fit and hold the frame square while the glue sets.



15 Form the hollow of the ogee with a 3/8in spindle gouge



17 Use callipers to transfer dimensions from one column to another



18 After sanding and waxing, trim the end dowels down to size.

Assembling the hourglass

Hourglass manufacturers fill the timer with sand and then seal up the hole with a resin cement which is covered by a small hemispherical metal cap. To provide a space for it, scrape a shallow hole in the centre of the disc using a small round-nosed scraper.

To assemble the hourglass, apply a drop of glue to each dowel and gently ease the spindles into their holes. Position the timer, add the top and weigh the sand glass down by placing a heavy object such as a book on top to keep everything in place while the glue dries. Then all that remains is... to turn, turn, turn!

FURTHER INFO

Hourglasses

Day-Impey

01757 223282

www.day-impey.co.uk



What lies beneath

BOB CHAPMAN



What you see isn't always what you get. Bob's elegant sycamore bowl looks plain and simple... until you turn it over



1 The sycamore blank still had its bark on, and needed stripping



2 Reverse the blank onto the screw chuck and turn it to round



3 Cut a dovetail and spigot on what will become the underside



4 Shape the underside to an ogee shape, taking the finest shavings



5 ...and repeat the process to clean up the underside of the rim



10 This clearly delineates the textured area of the underside



11 Sand off the peaks of the texturing and apply sanding sealer



12 Reverse the bowl on a four-jaw chuck, shape the rim and form a bead



During a recent turning demonstration, I showed how a small angle grinder could be used to texture the bottom of a bowl, and was surprised at the interest it generated amongst those watching.

It's a fairly simple technique once you've acquired the necessary angle grinder. I use a Proxxon long neck grinder, fitted with an Arbortech mini industrial blade. The long neck is necessary to give support on the tool rest. It's a super little machine, but has one very big drawback. It has a simple rocker-type on/off switch at the rear of the grinder, which often accidentally gets switched 'on' during handling or transport. This means that the blade starts rotating as soon as you plug it in. It still catches me unawares sometimes and is obviously dangerous if you were to have your hands on the blade at the time. Proxxon please note!

Choosing the wood

This sort of texturing looks particularly good on cycamore. Looking around the workshop for a suitable piece, I came upon a slab cut from a log some time ago, still wearing its bark. It's nice sometimes to start with an obvious lump of tree.

This piece was about 265mm in diameter and approximately 60mm thick in the middle, tapering down to about 12mm at the edge. It would be just about right for making the bowl I had in mind, photo 1.

Preparing the blank

The first thing to do was prise off the bark. Fortunately it was quite loose and came away easily. With the blank turned over, I found that the 'flat' side was anything but! Unfortunately, it had been cut from opposite directions with cuts which didn't quite meet in the middle, resulting in a

large step in the wood. Nevertheless, rather optimistically, I drilled a hole in the middle anyway, just missing the step, and mounted it on a screw chuck as best I could.

It was hopeless. Quite apart from the fact that it wasn't really secure, it wobbled enormously and any attempt to true it up would result in the removal of so much wood that hardly any would remain. It was time for a rethink.

Another angle

Using a four pronged drive centre in the headstock, I brought the tailstock up to support the blank with a live centre in the hole I'd already drilled for the screw. Using a 12mm bowl gouge, this allowed me to true up the face of the blank with little unnecessary loss of timber.

With this done, I could reverse the blank onto the screw chuck again, this time perfectly securely, and bring it to round, photo 2. I removed enough material to give a flat surface, and cut a dovetail spigot and foot in what would become the bottom of the bowl, photo 3. I marked the centre with a pencil.

Shaping the bottom

Next, I used the bowl gouge to remove the waste and shape the bowl bottom to an edge. I find this a most pleasing shape for the bottom of a bowl, and one that mates well with several different designs for the upper surface. I make the final cuts with the wing of the bowl gouge held at about 45° to the vertical, taking the finest of shavings very much like shear scraping, photo 4.

If the bowl bottom is to remain plain, now is the time to sand, seal and polish it. However, in this case I intended to texture



5 The Proxxon angle grinder fitted with a mini-industrial blade



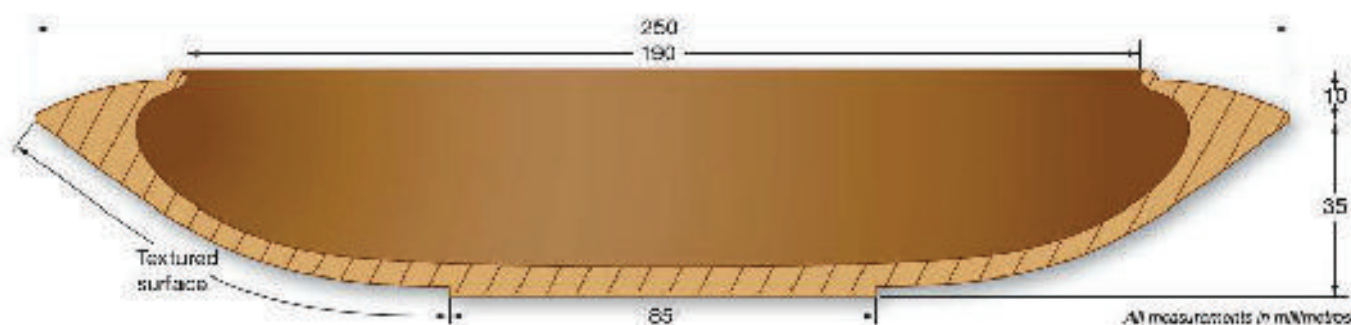
6 The long neck allows you to hold the grinder on the tool rest



7 The results of the first texturing pass from rim to centre



8 Use a narrow parting tool to cut through the texturing near the foot...





13 Use a skew chisel to form a groove in which to locate the bowl gouge



14 Deepen the cut with the gouge to undercut the rim slightly



15 Hollow out the remainder of the shape with the bowl gouge



16 Finish the recess with light cuts using a round-nosed scraper



17 Sand the bowl, then seal the surface with a wax mixture



18 Reverse the bowl onto the vacuum chuck and remove the tailstock



19 Turn the spigot away carefully and sand the foot smooth



20 Apply a wax mixture as before, taking care not to fill the hollows

it with the small angle grinder, photo 5. I adjusted the tool rest so that when held at about 45° the cutting edge of the Arbortech disc was at centre height. There must also be a big enough gap between the rest and the bowl to allow the grinder to be moved inwards from the edge of the bowl to its foot, photo 6.

Starting to texture

With the lathe and the grinder both switched on, I stroked the grinder quite gently across the bowl from the rim inwards towards the centre. You must try to avoid catching the actual rim of the bowl or the edge of the foot as you near the centre. You might think that you're in danger of grinding the bowl away and ruining it completely, but never fear: just maintain a light touch. Photo 7 shows the result of the first pass with the grinder. Note that the cuts were actually quite widely spaced near the rim, and very close together near the foot where the bowl was moving more slowly as it rotated.

Repeat the stroking cut with the angle grinder, but only move it three quarters of the way towards the foot. Repeat again, going halfway this time. Limit the final cut to the first quarter of the bowl bottom. Making these four light cuts should result in fairly equally spaced cuts across the whole width of the bowl bottom.

Cleaning up the surface

The angle grinder produced a ragged start near the rim and an equally ragged end near the foot, and these needed attention to give the texturing a clean look. I used a narrow parting tool to cut a slight recess through the texturing near the foot, photo 8, and at the rim, photo 9. The result was a neat edge at both rim and foot, and an overall controlled look to the texture, photo 10.

I then sanded the textured area, but only lightly with first 240 and then 400 grit paper. The idea was to gently smooth the tops of the textured bumps so that when they were later polished they would catch the light and shine. I then gave the bowl bottom a generous coat of sanding sealer, photo 11, using a small brush to get into the texturing. I didn't attempt to polish it at this stage.

Shaping the top

With the bowl reversed and held by the spigot in a four jaw chuck, I started work on the upper surface of the bowl. Using the

bowl gouge in a pulling cut, I formed a slightly angled rim together with a raised bead which would form the edge of the bowl recess, photo 12.

When the rim was finished, I used a skew chisel to form a groove in which to locate the bowl gouge, photo 13. This prevented the gouge from shattering backwards and destroying the rim I'd just carefully finished. Once started, I deepened the cut with the gouge and angled it slightly backwards in order to undercut the rim slightly, photo 14. This deepens the shadow cast by the rim and increases the illusion of depth.

I hollowed out the remainder of the recess with the bowl gouge, photo 15, before finishing it with light cuts from a large round-nosed scraper, photo 16.

Polishing up

I powersanded the interior of the bowl, working down through the grits. After sealing the surface, I polished it with a mixture of beeswax and carnauba wax, buffing it up with a soft cloth, photo 17. Note that you should hold the cloth in such a way that a catch would simply pull it away from your hand with no harm done. Never wrap a polishing cloth around your fingers!

Finishing turn

I reversed the bowl onto the vacuum chuck, using the live centre in the tailstock to centre the bowl on the pencil mark made earlier. As soon as the vacuum began to form I removed the tailstock, photo 18.

I then turned away the spigot, photo 19, and sanded and sealed the foot. Finally, I treated the entire bottom of the bowl with beeswax and carnauba wax, taking care not to fill the hollows, and buffed up the final finish with a soft cloth, photo 20.



GREAT PRIZES IN OUR TURNING COMPETITION

WIN!

READY, STEADY, TURN!

INTERNATIONAL WOODWORKING EXHIBITION, ALEXANDRA PALACE, LONDON, 8-10 FEBRUARY 2008

Now's the time to make a start on your competition entries for our London show, to be held as usual at the Alexandra Palace. With such great prizes on offer, there's no excuse not to have a go!

THE PRIZES

Once again we've divided the competition into two categories: Enthusiast and Prestige. The prizes for each category are as follows:

1st Prize

A 5-day turning course in the South of France with Craft Supplies, worth over £1000 (or as an alternative, £350-worth of products from Craft Supplies), PLUS £250 donated by the Worshipful Company of Turners

2nd Prize

Products from the Record Power range to the value of £400

3rd Prize

Products from the Record Power range to the value of £200

4th Prize

Products from the Record Power range to the value of £75

RULES

- 1 The competitions are open to all readers in Great Britain, Northern Ireland, Eire, the Channel Islands and the Isle of Man
- 2 Entry implies acceptance of the rules as being final and legally binding
- 3 All entries must arrive before the closing date
- 4 All projects must be the entrant's own work
- 5 No entrant may win more than one prize
- 6 Projects should not have been featured in competitive events at other national woodworking shows
- 7 The judges reserve the right not to award all the prizes if there is an insufficiently high standard of entries
- 8 The judges' decisions are final



TURNING AT LE MOULIN The Craft Supplies courses are run by Nick and Fran Davidson, and are held at Le Moulin de la Materette, situated near the tiny hamlet of Durban-sur-Arize in the beautiful Ariège region of the French Pyrenees. They consist of five half-days of tuition for the turner with the course tutor, Jaimie Wallwin, which leaves plenty of free time to enjoy the facilities at Le Moulin and the beauty of the surrounding area. Non-turning partners can simply enjoy the five-day break. The 10-acre site has a large heated swimming pool, and there are facilities for badminton, table tennis, croquet and boules. Walkers and cyclists can enjoy the spectacular surroundings, wildlife and historic sights. Accommodation at Le Moulin is in en-suite rooms, with breakfast, buffet lunch and a four-course dinner each day all included in the prize. Visit www.materette.com for more details.

ENTRY FORM

If you intend to enter the competition, please complete this form and send it to the address below, to arrive no later than 25th January 2008.

Alexandra Palace Woodturning Competition
The Woodworker, Magicalia Ltd,
Berwick House, 8-10 Knoll Rise,
Orpington, Kent BR6 0EL

Please post your entry to the same address, to arrive no later than 1st February 2008. Alternatively, bring the entry to the exhibition on either 8th or 9th February 2008.

PLEASE FILL IN USING CAPITAL LETTERS

Competition category.....

Name.....

Address.....

.....

..... Postcode.....

Daytime telephone number.....

Mobile telephone number.....

Title / description of entry.....

.....

Estimated value for insurance £.....

Signature..... Date.....



Choosing the right chuck

IAN WILKIE



Treating yourself to a brand new chuck means facing a lot of choices. Ian Wilkie checks off the main points you need to look out for

At some stage the woodturner is likely to invest in a new woodturning chuck. This is a major purchase and will probably include the cost of extra jaw types to cater for specific tasks. When I first started woodturning the range was very limited, but now it's much wider. I've been fortunate over the last 15 years to have had the opportunity to test just about every chuck on the market, and with all this experience I've highlighted some key points to guide your choice.

Two tribes

Woodturning chucks fall roughly into two types. The first group uses a wedge system to contract and expand the jaws, and this involves dismantling the chucks to change the role; the Multistar Duplex is a good example. The second group is based on the engineer's scroll chuck, which will expand or contract using a single key or two tommy bars. This type of chuck is much easier to

use, and is more popular today with woodturners. It's the scroll chuck that I'm concentrating on in this article.

Scroll chucks

The engineer's scroll chuck has been used by metal turners for many years. However, the jaws are unsuitable for woodturners.



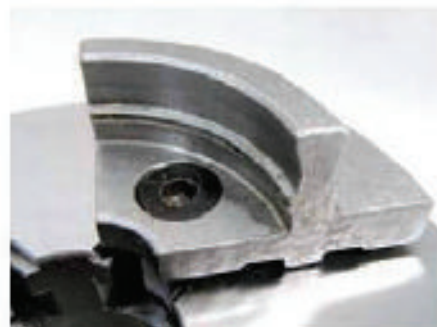
1 The T slots for the jaw centers should be rounded off smoothly



2 The gear teeth on the rear of the disc engage with the two pinions



3 The scroll on the front of the disc drives the action of the jaw carriers



4 A wood-turning jaw screwed on to a jaw carrier

because they tend to crush the wood and so throw the work out of balance. The design was therefore adapted for woodturning, and the metal carrying jaws were replaced with jaw carriers (sometimes referred to as slides) on to which jaws suitable to hold the wood could be screwed.

The chuck consists of a steel body, the face of which has four precision-machined T-slots cut into it, photo 1 and fig 1. Inside the body there is a cast machined disc with a scroll machined on the front surface and gear teeth formed on the rear. Two pinions, rotated by means of a hex key, engage with the gear teeth and revolve the disc as required to open or close the jaws, photo 2.

As the disc revolves, four jaw carriers engage with the scroll and move in or out to give an accurate concentric movement. They're shown engaged in photo 3, with



5 The Super Nova 2 chuck has four inserts for different lathe spindles



the chuck body removed for clarity. The wood holding jaws are screwed on to the carriers with hex-head screws, photo 4.

Mounting the chuck

A plate is fitted to the back of the chuck, which ideally is threaded to match the lathe spindle; the fewer the parts, the more likely the chuck is to rotate accurately. However, this poses a problem for manufacturers as there are so many different spindle sizes.

Most chucks have the option of either a separate machined back plate or a screwed insert, as shown in photo 5. Both these choices should be satisfactory, but screw-in inserts can sometimes pose a problem and I prefer the machined back plate.

It's essential when ordering your chuck to

EIGHT KEY CHUCK CHECK POINTS

Here are the key points to look for in a well-designed chuck.

- 1 Whether screwed directly, or fitted with a plate or insert, the chuck must screw on to the lathe spindle smoothly and easily, and must rotate accurately.
- 2 It should have a smooth expanding and contracting action operated by means of a single key.
- 3 There must be no unnecessary sharp edges on the body and around the T slots.
- 4 A stop device to prevent the jaw carriers from being extended beyond the chuck body is a good safety feature.
- 5 A wide selection of accessory jaws must be readily available.
- 6 The back of the chuck should be sealed against dust.
- 7 The hex screws securing the jaws to the jaw carriers need to be of good quality.
- 8 Finally, the chuck should be robust and free from vibration in use.



6 A single-key chuck has the advantage that the work can be held with one hand and the key rotated with the other



7 The manufacturer of this chuck has failed to allow for the horizontal register or spigot, so it won't fit the lathe it's designed for.



8 This One-way chuck has an adapter to fit the Myford Mystro lathe, so it can be locked into the V slot behind the register. The number on the jaw carrier can be seen.



9 A Robert Sorby Steb centre designed to fit into the standard jaws of the Patriot chuck.



10 Nova Cole jaw plates are designed for double chucking work.



11 Nylon jaw plates can be adapted for a particular job and are extremely useful. Here they are shown holding a thimble.



12 A screw insert is usually included as a standard accessory with any chuck.

know the size of your lathe spindle thread. The scroll chuck will centre automatically and most are now operated by a single key. This is much easier to use, photo 6, leaving one hand free to hold the work.

The two pinions are positioned opposite one another for convenience, but only one needs to be operated to move the jaws. Models with two turning bars are not so popular now, and if they are used carelessly it is only too easy to elongate the holes in the body and damage the chuck.

Don't force it

If the chuck you purchase doesn't screw smoothly onto your headstock spindle, send it back to the manufacturer. Don't attempt to force it on or you will damage your headstock spindle thread, and that could be expensive to cure! Photo 7 shows an example of a chuck threaded to match a lathe spindle; however, the manufacturer has failed to allow for the horizontal register or spigot. This chuck will not fit the lathe it is designed for.

Lastly, choose your chuck to suit the size of your lathe. Some chucks are large and heavy, and are unsuitable for lighter lathes.

Open wide

Manufacturers produce a very wide range of jaws to fit their particular chuck, and most situations can be catered for. Some are now producing jaws which can be used in other chucks. Some make jaw carriers that allow other manufacturer's jaws to be fitted, but these tend to be rather complicated and accuracy may be sacrificed.

The point to take on board is that jaws designed for a self-centring chuck have optimum diameters for efficient gripping of a spigot or recess, and one set isn't going to cater for all tasks. Most of the jaws have a 15° dovetail in the inner and outer surface; some have a ribbed inner surface to give a firm grip on parallel spigots.

Most jaw carriers are marked with the numbers 1 to 4, which correspond with matching numbers engraved on the jaws themselves; matching these numbers will ensure concentricity, as shown in photo 8.

Jaw variations

A short-shanked four-prong drive device can usually be held in the jaws without removing the chuck for between-centre turning; the Steb centre, photo 9, is a good example. Specialist plate jaws are designed to hold the edge of a bowl when tidying up the base, photo 10, and high-grade nylon blanks are available for making up jaws for a specific task, photo 11. It is usual for any chuck to come with a screw insert as a standard accessory, photo 12.



Clean out hex screw heads regularly



Store chucks in airtight containers

FIVE KEY CHUCK CARE TIPS

Chucks and jaws are expensive items, and it is important to look after them if they are to function efficiently. Here are five key points to remember.

- Follow the manufacturer's instructions on regular maintenance
- Keep the lathe thread and register, and the inside thread of the chuck, clean and oiled. Oils with silicon added are particularly recommended
- The screws used to secure the jaws to the carriers have a hex recess which traps dirt and debris; make sure this is cleaned out before inserting the hex key, above left
- Avoid splashing the chuck with sanding sealer or polish; this is difficult to remove once it has set
- Store the chuck in an airtight container when it's not in use, above right.



This month's Giant Test features a dozen budget jigsaws ranging in price from £30 to £110, and finds some excellent performers



Taylor's Testbench looks at a drill driver, a jigsaw, spokeshaves, a hand drill, some sharpening stones, aerosol wiping stains and a magnetiser/demagnetiser

ALSO TESTED

- Oneida Dust Deputy extractor
- Proxxon BBS/S block belt sander
- Proxxon IB/E drill/grinder
- Record TS200C table saw
- Trend push block
- Veritas low-angle jack plane

PLUS

MACHINERY CHECKLIST 6:
Random orbit and palm sanders

OUR RATINGS

- 5 Faultless performance, excellent value for money
- 4 Very good performance, good value for money
- 3 Average performance, reasonable value for money
- 2 Less than satisfactory performance, poor value for money
- 1 A stinker: avoid at all costs!

Woodworker
BEST ON TEST

The tool in the group with the best overall performance

Woodworker
RECOMMENDED

Other tools on test that performed well

Woodworker
BEST VALUE

A great product for the price

ONTEST

Tools & accessories tested by our experts

PRICE: £186.82

RATING



PROS

- Excellent performance
- Solid build quality
- Good range of Trend accessories

CONS

- On the pricey side unless you can get discounted
- Charger is slow by today's standards
- Not recommended for use with flat bits over 20mm or with auger bits over 13mm

SPEC SHEET

Batteries (2)	2.0Ah Ni-MH
No-load speed	0-2300rpm
Impact rate	3000/min
Tool holder	1/4in
Weight complete	1.74kg

FURTHER INFO

Trend Machinery

0800 487063

www.trend-uk.com



The new limited edition T50 Snappy impact driver is an interesting development from Trend. Ben Plewes has tried it out

TREND T50 SNAPPY 12V impact driver

For those unfamiliar with Trend's Snappy range, it has until now consisted of quick-release accessories for both corded and cordless drills from other manufacturers. The T50 is a significant development from the company.

The T50 comes in an orange moulded plastic carrying box with a one-hour charger and two 2.0Ah Ni-MH batteries. It has forward and reverse gears and variable speed. Three screwdriving bits are included and there's plenty of storage space for additional accessories.

Build quality is impressive, as are the ergonomics. Trend has obviously spent a good deal of time and effort developing this machine. The orange plastic housing looks like GRP. The black rubberized area of the housing and the front of the trigger add to an already comfortable design. The front end, near the Snappy quick-release chuck, has a silver metal housing. The gearing inside the machine is also metal for prolonged life.

The T50 has a reassuringly weighty feel. Most of the weight is low down and, as a result, the machine has a pleasing centre of gravity. I tested the T50 with a piece of 60mm English oak and a 70mm Pozidriv screw. It drove the screw straight through with no pilot hole and without any complaint. In fact, the T50 simply kept on driving and showed no sign of giving up. When the screw was flush with the timber surface, the oak actually started to split. This was an impressive performance then, from a machine with seemingly good all-round specification.

For a video demonstration of the T50 in use, visit www.getwoodworking.com



WV VERDICT

I was surprised to learn that Trend have rated the T50 for 'light trade' use. With manufacturers like Bosch and Makita producing industrially-rated machines at similar prices, why would you buy Trend's model? Perhaps because of the Snappy quick-release system, or perhaps because street prices can be a lot lower than RRP's. A quick Google on the T50 reveals a price as low as £116.33 from www.alltools.co.uk, and at that price you'd be crazy not to!

GIANT TEST

Budget jigsaws

ANDY STANDING



Powered jigsaws are eminently versatile tools for cutting jobs both in and outside the workshop, so it's no surprise that they're very popular. Andy Standing tests and compares 12 models at the lower end of the market

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

The modern powered jigsaw is a versatile machine; coupled with the huge range of available blades, it'll cope with a variety of tasks and materials, from rough-cutting sawn boards to shaping intricate curved components. Whilst the bandsaw will cut external curves, only the jigsaw can deal with internal shaped work. Powered fretsaws can also do some of the work of the jigsaw, but generally their use is restricted to finer work.

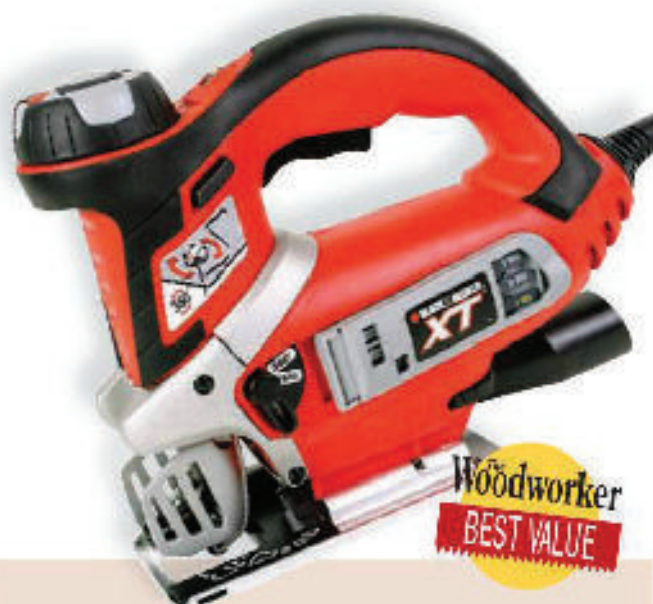
Continued on page 77

BLADE TYPES

A range of blades is available to enable a variety of jobs to be tackled in materials such as wood, metals and plastics. It makes sense to keep a selection, as they aren't expensive.

One unusual type is the down-cut blade (photo, bottom right) which, as it cuts on the downstroke, leaves a neat top surface without any breakout. It's designed for cutting laminated worksurfaces and other delicate materials that would splinter if cut with a standard blade.





Woodworker
BEST VALUE

BLACK & DECKER XTS10EK

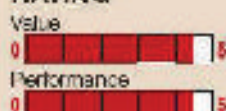
This striking-looking machine has black rubber soft-grip inserts on the handle, and is unusual in that it's the only 'scrolling' jigsaw tested here. This means that the blade alone can be turned rather than having to steer the whole body of the tool. The advantage of this is that it's easier to cut intricate shapes in confined spaces, where turning the whole tool might not be possible. It can also be used as a normal jigsaw by locking the scrolling control.

The trigger isn't speed-sensitive, but a variable-speed control wheel is conveniently mounted on the top of the handle. An extraction pipe clips onto the side of the baseplate and the baseplate itself is easily adjustable without tools. Blade changing is tool-less. On the side is a three-position switch to control the scrolling and orbital motion, and there's also a useful blade storage compartment with space for three blades.

This XTS10K performs well. The scrolling function is certainly useful, once you get used to it, though the orbital motion is less effective.

PRICE: £34.95

RATING



PROS

- Scrolling action, tool-less blade changing, blade storage

CONS

- Less effective orbital action

SPEC SHEET

Power	500W
Max depth of cut	65mm
Weight	2.8kg
Accessories	storage case, dust extraction pipe, blades

FURTHER INFO

Black & Decker
01753 511234
www.blackanddecker.co.uk



The blade release lever



BOSCH PST 650L

Bosch invented the jigsaw and this is one of their more basic models. It's attractively styled with a generously padded handle, but there are few frills apart from a very bright mains-powered laser. It's a single-speed machine with a large trigger and a double-ended lock-on switch, but no orbital control. There's an extraction pipe at the back and a removable Perspex blade shield. A blade storage box, with space for a pair of blades, slides into the baseplate.

A two-position switch on the side operates the dust blower when a dust extractor isn't being used. It blows a jet of air from the motor onto the cutting line, keeping it clear of sawdust. Blade changing is very quick as the Bosch uses an efficient sprung release system operated by a small lever. The baseplate can be tilted to 45° in both directions, but you'll need a screwdriver to do this.

The Bosch is a powerful performer, but without orbital action it's rather slow and the lack of variable speed reduces its versatility. A solid machine, though with limited features.

PRICE: £39.99

RATING



PROS

- Bright laser, dust blower, blade storage

CONS

- No orbital action
- Single speed

SPEC SHEET

Power	500W
Max depth of cut	85mm
Weight	1.7kg
Accessories	blades

FURTHER INFO

Bosch
01895 838743
www.bosch.co.uk



The laser-line generator



DRAPER PT780VK

Though the Draper is the cheapest machine here, it's a surprisingly eager performer. It's smoothly shaped with a strip of rubber padding on top of the handle and has a good-sized trigger with a lock-on button on the left. The variable-speed wheel on the front of the handle is easy to adjust with a particularly good speed range – if you wind it right down, the motor actually stops.

The four-position orbital control provides an impressive cutting speed. A dust extraction pipe is built into the rear and there's a sliding Perspex cover over the blade. Blade changing involves a hex key, which is stored on the cable. The baseplate is adjustable using the same hex key. A side fence is also supplied to help you make straight cuts parallel to an existing edge.

In use the Draper is gutsy. It powers along and is easy to control with the convenient variable speed dial. The orbital control offers good versatility and the quality of cut is good. Overall this is an impressive tool for a bargain price.

PRICE: £30.67

RATING



PROS

- A gutsy machine, good speed range

CONS

- Nothing obvious

SPEC SHEET

Power	710W
Max depth of cut	80mm
Weight	2.2kgs
Accessories: storage case, side fence, blades	

FURTHER INFO

Draper
02380 286365
www.draper.co.uk



The easy-to-reach speed wheel



SIP 01508

The SIP is quite a large machine made entirely from soft-grip plastic, which makes it very comfortable to hold. There's a double-ended lock-on button in front of the trigger switch, and a variable-speed control dial on the front, which is a bit of a stretch to reach. There's also a four-position orbital control lever and a dust extraction tube at the back, along with the switch for a small LED light mounted above the blade to illuminate the cutting line.

A sliding Perspex blade shield is fitted and there's a large sprung lever for easy blade changes. The baseplate angle can be adjusted using a small cam lever underneath, and it also has a removable plastic shoe which provides protection against scratching when cutting delicate materials.

The SIP is a pleasant machine to use. It's powerful and controllable, and comfortable. The work light is a useful feature and the dust extraction is efficient. Overall it's a competent and comfortable machine which performs well and includes some useful features.

PRICE: £34.92

RATING



PROS

- Powerful, very comfortable, useful work light

CONS

- Hard-to-reach speed control dial

SPEC SHEET

Power	800W
Max depth of cut	100mm
Weight	2.5kgs
Accessories: storage case, side fence, blades	

FURTHER INFO

SIP
01508 600369
www.sip-group.com



The SIP's bright worklight



**Woodworker
RECOMMENDED**

SKIL 4580

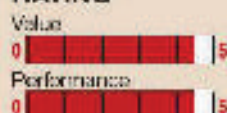
Skil are part of the Bosch group and this tool has benefited from Bosch expertise as it's well specified and solidly made. The handle is covered with soft-grip rubber, and the large trigger has a double-ended lock-on button. The variable speed dial is well positioned for easy thumb operation. There's a four-position orbital control and a powerful dust blower which keeps the cut line clear of dust. Because there's no Perspex blade shield, the extraction outlet at the back isn't that effective.

Above the blade is an LED worklight which illuminates when the trigger is pressed. The blade is held in place with a hex screw (a key is stored on the machine). The adjustable baseplate is cam clamp operated, and it has a pair of blade storage slots, as well as a plastic coating on the underside to protect delicate workpieces.

This is a terrific performer. It has a particularly smooth motor and can cut extremely fast. The worklight is bright and the blower keeps the line perfectly clear, so no excuses for inaccurate cutting here.

PRICE: £37.98

RATING



PROS

- Fast cutter, built-in worklight, dust blower

CONS

- Ineffective dust extraction

SPEC SHEET

Power	600W
Max depth of cut	80mm
Weight	2.2kgs
Accessories: storage case, blades	

FURTHER INFO

SKIL
01895 838791
www.skileurope.com



Orbital control and blower switch



**Woodworker
BEST ON TEST**

SITE SMA400

The Site jigsaw is from a new range of power tools exclusively marketed by Screwfix.

However, what sets them apart from other 'own brand' ranges is the fact that these tools are made by Makita, and it shows. This is an attractive and well-balanced machine with a solid plastic body and a heavy alloy baseplate. There's a variable speed control on the back and a small detachable dust extraction tube that can be clipped to either side of the baseplate. A protective plastic shoe is also supplied to prevent damage to sensitive workpieces.

A sprung plastic lever is used for blade changes and there's a four-position pendulum control on the side of the machine. The baseplate can be tilted to 45° in either direction and a hex key is supplied to adjust it.

The Site is a real pleasure to use. With its smooth soft-start motor and excellent quality of cut, it powers through the toughest jobs. It has a reassuringly robust feel and runs with almost total lack of vibration. Overall, this is an excellent machine.

PRICE: £109.99

RATING



PROS

- Soft-start motor, good quality cut, minimal vibration

CONS

- None we could find

SPEC SHEET

Power	720W
Max depth of cut	135mm
Weight	2.4kgs
Accessories: storage case, extraction tube, blades	

FURTHER INFO

Screwfix Direct
0500 414141
www.screwfix.com



Extraction tube clipped in place



RYOBI EJS-710QEO

The Ryobi is a substantial machine with a large body and rubberised top handle. It has a large trigger, again with rubber insulation, in front of which is the variable speed wheel which is easy to adjust with your thumb.

There's the standard four-position pendulum control on the side, and the heavy alloy baseplate is easy to adjust with a built-in locking lever. An extraction tube plugs in at the back end, unusually, this also incorporates a blade storage compartment.

Blade changing is a tool-less process with a small sprung lever mounted on the front. Also on the front, just above the cutting point are a pair of LED lights which illuminate the cutting line when the trigger is pressed. There's also a blue indicator light in the main handle and this is illuminated whenever this machine is connected to the mains.

In use the Ryobi is a competent performer though there's a certain amount of vibration. The worklights are a bonus and the dust extraction is particularly good. Overall this is a solid machine for a reasonable price.

PRICE: £79.99

RATING



PROS

- Good dust extraction, handy worklight

CONS

- Some vibration

SPEC SHEET

Power	710W
Max depth of cut	120mm
Weight	3.4kgs
Accessories	storage case, side fence, extraction tube, blades

FURTHER INFO

Ryobi
01625 894400
www.ryobipower.co.uk



The baseplate locking lever



ERBAUER ERB807A

The Erbauer is another rather bulky machine with a very high top handle.

It's well made with a smooth body and rubber handle insert. A large dust extraction tube plugs into the back of the alloy baseplate. There's a four-position pendulum control on the side and the variable speed wheel is mounted just in front of the large trigger, making it easy to adjust.

Blade changing is good; a sprung collar is fitted to the main shaft which is twisted to accept the blade. Twist it again and the blade is ejected by an internal spring – a useful feature, as used blades can be quite hot. The baseplate is a good design with a particularly open view around the blade. It can be tilted to 45° in both directions and a hex key is supplied for making adjustments.

The Erbauer has a very slow soft-start, meaning that you squeeze the trigger and about two seconds later the motor actually starts, which takes a little getting used to. It runs fairly well, though with some noticeable vibration, and cuts reasonably fast.

PRICE: £59.99

RATING



PROS

- Quick/safe blade change, large baseplate aperture

CONS

- Slow soft-start function

SPEC SHEET

Power	800W
Max depth of cut	100mm
Weight	3kgs
Accessories	storage case, side fence, extraction tube, blades

FURTHER INFO

Screwfix
0600 414141
www.screwfix.com



The extraction tube plugged in



BOSCH GST75BE

The Bosch is an attractive machine, with a smoothly-shaped body and extensive soft-grip padding. The top handle houses a large variable-speed trigger and there's a double-ended lock-on button. The variable speed wheel is at the back of the handle with a dust extraction adapter below.

On the left is a four-position orbital action switch and below this is the control for the dust blower. The baseplate is pressed steel and can be tilted to 45° in both directions using a hex key, which is stored in a clip on the power cable.

A tool-free SDS blade-changing system is used which makes the process simple and quick. As the blade is inserted the mechanism automatically locks it in position, and a simple twist of the locking collar releases it. A clip-on Perspex blade shield is also supplied.

The Bosch is a pleasure to use. It's very comfortable to hold, and the motor is powerful and smooth. The blade is well supported and cuts accurately, even in thick material. Overall, an excellent machine at an attractive price.

PRICE: £109.99

RATING



PROS

- Smooth and powerful, SDS blade change system, dust blower

CONS

- Nothing we found

SPEC SHEET

Power	660W
Max depth of cut	90mm
Weight	2.3kgs
Accessories: storage case, blades	

FURTHER INFO

Bosch
01895 838743
www.bosch.com



Pendulum control and dust blower



DEWALT DW341

The DeWalt is a compact and rugged machine designed to cope with the rigours of sustained use. It has a hard plastic body with a raised top handle, incorporating the variable-speed trigger which houses a small wheel for setting the maximum speed. On the side is a three-position pendulum adjustment. The baseplate is steel and is supplied with a protective plastic shoe, and can be tilted to 45° in both directions; either a hex key or a screwdriver can be used to adjust it.

Blade changing is straightforward: a simple sprung lever is mounted on the main shaft and this works efficiently. The cutting mechanism is well protected by steel bars that extend up from the baseplate, providing additional rigidity to the baseplate and also shielding the front of the tool. The sides are also protected with a shorter pair of steel crash bars.

The DeWalt is a good performer with an eager motor, and its small size makes it convenient to use. Overall a good solid machine that's built to last.

PRICE: £99.99

RATING



PROS

- Rugged construction, compact

CONS

- None

SPEC SHEET

Power	560W
Max depth of cut	85mm
Weight	2kgs
Accessories: storage case, dust extraction tube, Perspex shield, blades	

FURTHER INFO

DeWalt
01905 39258
www.dewalt.co.uk



Trigger with integrated speed control



MAKITA 4329

**Woodworker
RECOMMENDED**

The latest jigsaw from Makita is a compact tool designed for serious DIY or light professional use. It has a generously rubber-padded handle with a large trigger, a lock-on button, and a variable speed wheel at the front top corner. A small four-position pendulum selector is fitted on the side.

The small alloy baseplate can be tilted to 45° in either direction using a hex key, which is stored on the back of the machine. A dust extraction tube is incorporated in the base of the machine, though with an internal diameter of 25mm you may need an adapter.

To change blades the hex key is again used, but access to the blade clamp is good so this isn't a difficult process. On the front of the machine is a sliding Perspex shield which can be extended down to enclose the blade completely. This makes the dust extraction really efficient and, surprisingly, doesn't actually obscure the view of the blade too much.

Despite cutting at a fairly sedate rate, the Makita runs very smoothly. Overall a good quality tool.

PRICE: £62.27

RATING



PROS

- Smooth runner, good extraction

CONS

- Fairly slow cutter

SPEC SHEET

Power	450W
Max depth of cut	65mm
Weight	1.9kgs
Accessories: blade	

FURTHER INFO

Makita
☎ 01905 211675
🌐 www.makitauk.com



Good extraction with the visor down



EINHELL ESPT 710

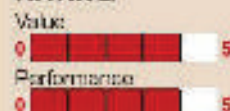
This is another tool that's made from soft-grip plastic or, as Einhell put it, 'softpainted'. It's a large and relatively basic machine, though it does have a laser guide. The handle is really comfortable with a large trigger and a lock-on button, variable speed dial, a four-position orbital control and dust extraction at the back. Unusually the blade is clamped with two hex screws, a key for which is stored on the cable.

The laser is battery-powered and in a separate unit on the front. There's also a short POerspex blade guard, though it doesn't reach right down to the baseplate, so the dust extraction isn't perfect. The baseplate is a rather small pressed-steel design which can be tilted to 45° in either direction, using the hex key.

The Einhell is a good performer. It runs smoothly, has an eager motor, and the variable speed is good, though the cutting speed isn't as fast as some of the others. Overall it's a workmanlike tool at an attractive price.

PRICE: £32.63

RATING



PROS

- Smooth runner, laser guide

CONS

- Slower cut speed

SPEC SHEET

Power	710W
Max depth of cut	80mm
Weight	2.5kgs
Accessories: side fence, blades	

FURTHER INFO

Ryobi
☎ 0800 068 8238
🌐 www.toolbank.com



Blade changing uses a hex key

HOW TO MAKE A PLUNGE CUT

When cutting internal curves you need first to make a hole so that the jigsaw blade can be inserted through the workpiece. This can be done with a drill, but you can also use the jigsaw to cut its own hole. This is called a plunge cut, and it's quick and easy to do. Before you start, switch the pendulum action to zero, and choose a medium speed.



1 Position the tool nose-down with the blade over the waste part of the workpiece. With the blade clear of the workpiece squeeze the trigger and wait for the tool to get up to speed



2 Gently tilt the jigsaw back so that the blade begins to cut the surface. Don't press hard; otherwise the blade action may cause the tool to dig in and jump upwards. Let it dictate the speed of the plunge



3 As the blade works through the thickness of the material, slowly slide the machine forward a little to increase the clearance on the end of the blade. When the blade breaks through, pull the jigsaw back a fraction and let it settle down onto the workpiece

SAFETY

Always wear eye protection. Jigsaws throw a lot of sawdust upwards which will invariably find its way into your eyes. Make sure that the mains cable is trailing behind the machine, above the workpiece and can't contact the blade. Check for obstructions underneath your workpiece before you start cutting - a powerful jigsaw will quickly make short work of a carelessly-positioned Workmate!

Power jigsaws are becoming more sophisticated and cheaper, and so even at the lower end of the market - the focus of this group test - there are still some really competent tools.

Features

Power and speed: Jigsaws generally have motors rated at around 500W or more. Variable speed is a real asset and makes the saw much more versatile as it can cope with a wider range of materials such as metals and plastics. The speed is generally controlled by a setting wheel, and ideally the trigger should also regulate the speed, so that the harder you squeeze, the faster the motor runs. A double-ended lock-on button makes it suitable for both left- and right-handed users.

Orbital action: Most jigsaws now have an adjustable orbital

or pendulum action which increases the aggression, and therefore speed, of the cutting action by moving the blade backwards and forwards in a slightly circular motion.

When standard blades are used, the jigsaw cuts on the upstroke so the orbital motion moves the blade forward on the upstroke and back on the downstroke. This is useful both when crosscutting and ripping timber, but the increase in cutting speed is accompanied by a coarser finish. Orbital action should be switched off when cutting metal, plunge cutting, using a down-cutting blade, or cutting intricate shapes, where precision is important.

Sole plate: The sole plate should be adjustable and tilt to 45° on either side. On many machines you need to use a screwdriver or a hex key for this, but some have a locking lever to speed up the

process; so if you need to do a lot of angled cutting, consider one of these.

Dust extraction: Because jigsaws cut on the upstroke, they pull up a considerable amount of sawdust, which can be thrown up into the eyes. Needless to say, this is very irritating, and makes it difficult to follow a marked line. A good jigsaw should have a dust extraction pipe built into the body, and also transparent shielding around the blade, but make sure that this doesn't obscure a clear view of the blade.

Blade changing: This should be quick and easy. The best systems are tool-free, using a sprung lever to release the blade. Some require the use of a hex key, which is usually stored on the machine.

Using a jigsaw

Jigsaws will cut remarkably accurately, providing the correct technique is used. Remember that the blade is only fully supported at the top, and that it can easily flex lower down if too much side pressure is exerted on it, which will result in a ragged cut and an uneven edge to the workpiece.

To avoid this, always use a sharp blade (blunt blades wander off line), and steer the tool by turning it rather than pushing it from the side. Use the correct feed speed and make sure that you're using the right blade; for intricate work with tight curves you need a narrow blade, for straight lines choose a wide blade. Above all, never force the tool into the cut.

WV VERDICT

There's quite a range of machines here and a wide spread of prices, but several tools do stand out. At the lower end, the **Black & Decker** is a versatile machine. With its scrolling action, it can be used in the most confined locations. For a few pounds more the **Skil** offers great performance and an impressive list of features.

For those with deeper pockets, consider the **Makita**. It's a well-made and competent tool with good all-round performance. Finally to the top of the tree and, unsurprisingly, it's a choice between the **Site** and the **Bosch**. Both are excellent machines and whichever you choose won't disappoint. My choice would be the **Site** as it offers great performance and is a pleasure to use.

TAYLOR'S TESTBENCH

IAN TAYLOR



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

SITE POWER TOOLS SMB600 DRILL DRIVER SMA400 JIGSAW

The latest Screwfix Catalogue includes a new professional-grade power tool range, under their Site brand, designed and manufactured by Makita. The first three are a jigsaw, a 14.4V drill driver and a 4 1/2in angle grinder, with six more tools due in 2008, including a 190mm circular saw and a 14.4V combi drill.

Screwfix's catalogue states that full Makita service support is available for these tools. I've tried out the drill driver and the jigsaw.

FURTHER INFO Screwfix ☎ 0500 41 41 41 🌐 www.screwfix.com

SMB600 14.4V DRILL DRIVER



This is a compact tool with two 1.3Ah Ni-Cd battery packs, a 30-minute charger and a tough plastic carry case. The handle is comfortable, with a soft rubber palm insert. The tool features a two-speed gearbox, 19 torque settings and an effective 10mm keyless chuck.

It worked very quietly and smoothly, right up to its maximum drilling capacity in timber. You can tell just from the running noise that it's a good step up from the lower-capacity DIY drills. I couldn't test its longevity, but it felt solid and up to Makita's reputation for robust tools.

I've only one minor niggle, and I've seen it on other cordless tools. When the battery's charging there's some radio interference; the digital radio in my workshop was inaudible while the charger was running. A bit more work on suppression is needed, I think.

PRICE: £74.99

RATING

Value 0 5
Performance 0 5

PROS

- ♦ Good performance at an excellent price

CONS

- ♦ RF interference from the charger

SPEC SHEET

Batteries (two)	1.3Ah Ni-Cd	
Capacities	wood	25mm
	steel	10mm
Max screw size	7.5 x 6mm	
No-load speeds	0-100rpm, 0-1300rpm	
Weight	2.0kg	

PRICE: £109.99

RATING

Value 0 5
Performance 0 5

PROS

- ♦ Smooth performer with good cutting capacity

CONS

- ♦ Nothing obvious

SPEC SHEET

Power	720W	
Speed	800-2800rpm	
Stroke length	26mm	
Cutting capacity	wood	135mm
	steel	10mm
Weight	2.4kg	

SMA400 200V JIGSAW

This is a very solid and extremely smooth-running jigsaw. The fact that it's also available in a 110V version is a clear indication that it's classed as a trade tool. The saw performed very well when I tried it out crosscutting 50mm thick oak. The cut had an excellent finish in the zero pendulum setting, and wasn't much rougher, but cut a lot faster, at the third setting.

There's a variable speed control on the back of the saw and the blade changing is tool-less. You rotate the lever at the front of the saw and simply slip the blade in or out. When you release the lever, the blade is locked tight. An extraction pipe can be clipped into position either to the right or left of the blade, which means extraction is right beside the cutting line, and you can set it up to ensure you maintain clear visibility.



PRICE: £10.68

RATING

Value 0  5
Performance 0  5

PROS

- Versatile tools at a good price

CONS

- Not much, at this price

FURTHER INFO

Toolbank

0800 088238

www.toolbank.com



Two screws give good blade adjustment

FAITHFULL SPOKESHAVES

A pair of spokeshaves is invaluable if you intend to incorporate curves into your work; there's nothing quicker for smoothing off a curved component. These two from Faithfull have a conventional design. Each is built around a solid casting, and is finished with a black enamel coating.

The adjusting mechanism involves two screws engaging in cut-outs in the back of the blade, which gives good control over the extension of the blade and allows it to be skewed – coarse cutting at one side or a finer cut simply by moving the cutting point along the blade. The flat-bottomed shave is designed for straight edges (eg chamfering) and convex curves. The convex shave allows you to work concave curves.

The blades in these versions are a hefty 2mm thick – substantially thicker than some others on the market. They needed a bit of work to flatten up the back and hone them, but took a sharp edge. Being a bit thicker, they should be less



susceptible to chatter.

I liked the cutting action of the flat-bottomed shave, which cut finely with little chatter. The convex shave didn't seem to work quite as smoothly, but I also had a similar difficulty when I switched to my standard shave, so I'd clearly selected a difficult timber sample. Overall they're a nice pair of tools, but with the flat-bottomed shave a bit ahead in my view.

DRAPER HAND DRILL

There are times when a simple hand drill is all that's necessary if you want to drill a few small holes. I keep one to hand on the shelf above my work bench; it's at least 50 years old and still going strong. It can be stress-relieving to do it the old-fashioned way occasionally, avoiding the whine of a power drill.

This sample from Draper is a



rear cap of the handle unscrews to give a storage space for drill bits, which can be handy – keep a few standard sizes in there and you're always ready to go.

PRICE: £13.99

RATING

Value 0  5
Performance 0  5

PROS

- Always available

CONS

- Light jobs only

FURTHER INFO

Draper Tools

020 8049 4339

www.draper.co.uk



The drill quickly makes small holes

conventional design, involving two gears engaging the drive wheel, one at the front and the other at the rear. If you think about it, the two gears revolve in opposite directions around the drill axis. So only the front wheel engages with the drill shaft. The rear is simply for balance. Some versions simply have a front gear, but the dual types seem to spin more easily as the balance is better. It has a self-centring 8mm chuck.

This drill is really only for light work as the body casting is fairly light alloy. Don't expect to find it easy drilling big holes in mild steel or a tough hardwood. I found that 3mm holes were easy, but 6mm in tough ash was quite difficult – you can't really get the drill speed high enough. The



Sharpening a blunt knife...

AXMINSTER SLIPSTONE SET

This set of 20 aluminium-oxide slipstones is new in Axminster's current catalogue. The set comprises five different shapes (flat, square, triangular, semi-round and round), each in four different colour-coded grades (180, 280, 400 and 800 grit). The stones are also clearly marked with their shape and grade.

Each stone is 150mm long. There's

something here for just about every type of intricate detailed sharpening or de-burring task. I tried out the round versions on a small carving gouge, the triangular ones on a veining chisel and the flat ones for simply sharpening a workshop knife. All worked nicely.

So if you have a variety of sharpening needs, these could be a useful addition to your tool kit.

PRICE: £10.74

RATING

Value 0 5
Performance 0 5

PROS

- A versatile set for intricate sharpening

CONS

- None

FURTHER INFO

Axminster Power Tool Centre

0800 371822

www.axminster.co.uk



...and a small veining chisel

PRICE: £9.40

RATING

Value 0 5
Performance 0 5

PROS

- Great value for reshaping damaged blades

CONS

- Rocks a bit with side-to-side movement of the tool

FURTHER INFO

Axminster Power Tool Centre

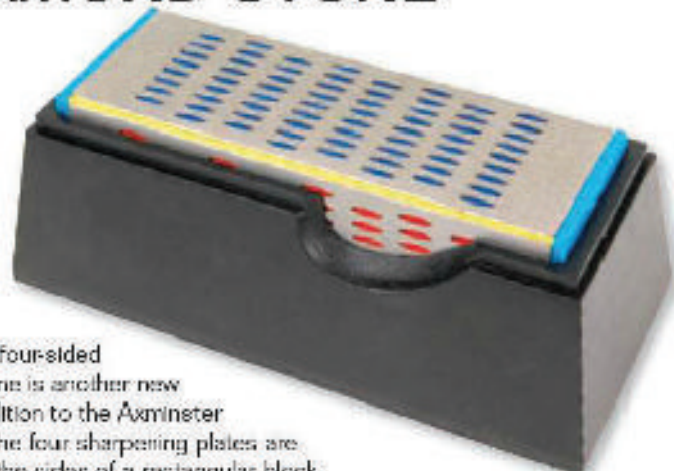
0800 371822

www.axminster.co.uk



The stone fits in a plastic base

AXMINSTER 4-SIDED DIAMOND STONE



This four-sided stone is another new addition to the Axminster

range. The four sharpening plates are fixed to the sides of a rectangular block which sits in a plastic moulded base. This has rubber feet to reduce slipping in use.

The stones are graded (200, 300, 400 and 600 grit) and colour-coded. Each has a perforated surface to allow for the clearance of swarf, but with a wider unbroken surface at the short edges, useful for sharpening small cutting tools. You use water as lubricant, but you must be sure to wipe the stone dry when you're finished.

The stone comes into its own for

repairing chipped edges, because it's straightforward to move from the lower grits to the higher, simply by turning the block through 90° to move to the next grade. So it's pretty fast, although it's clearly not up to the standard of the professional diamond sharpening stones. While it was pretty stable when working along the long axis, it was let down a bit by rocking if there's any side-to-side motion. The sides of the base are angled, so it would be hard to hold it in a vice.

BEHLEN AEROSOL WIPING STAINS

Here's another product new to Behlen in the UK. This range of stains comes in four colours: cherry, dark and red mahogany, and medium brown walnut. The delivery is by aerosol can, which holds 369ml of stain, so you can cover a big area quickly. Spray on, wipe or brush to even out the coverage, then after a few seconds wipe off any excess with a clean cloth.

Finishing can be done after 30 minutes, so it's a very fast process. The stains can be combined with glazes in the Behlen

PRICE: £7.80

RATING

Value 0  5
Performance 0  5

PROS

- Easy finishing, and very quick to use

CONS

- Limited range of colours, only available on the web

FURTHER INFO

Behlen UK

0871 8100 800

www.behlen.co.uk



Keep the can moving as you spray

range for a variety of finishes. Cleaning up is straightforward. First, there are no spills from the aerosols; second, simply invert the can and press the button for about five seconds until the spray is clear.

I tried them out on some offcuts. It was easy to get even coverage, although I wasn't working on a big area. As with all stains, you need to pay close attention to the finish of the timber before you start,

as any blemishes or rough patches will take the stain differently and it'll show in the finished article.

Although these products are aimed at commercial users, they could be a good option if you wanted to stain large areas and move on to top-coating quickly. Make sure you mask off any areas you don't want covered, and watch out for the inevitable overspray.

RUTLANDS MAGNETISER/DE-MAGNETISER

There are times when having a magnetised screwdriver tip can be a godsend, especially when you can't use one hand to steady the screw – when

you're holding on for dear life at the top of a ladder, for example! But at other times it can be a nuisance. This small item from Rutlands lets you choose exactly how you want your tip.

Insert your screwdriver tip into the lower opening and it comes out strongly magnetised. Insert it into the upper opening and it comes out de-magnetised.

That's the theory. In practice, magnetising was very effective, but de-magnetising needed a little bit of technique. I found that rubbing the tip along the underside of the moulding at the top of the upper opening was the best approach, and it needed doing two or three times. But that's not a problem. All in all, this is a useful device to have around.

PRICE: £9.95

RATING

Value 0  5
Performance 0  5

PROS

- Pick up screws or not; it's up to you

CONS

- There are cheaper versions around

FURTHER INFO

Rutlands

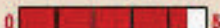
01829 815518

www.rutlands.co.uk



PRICE: £149.95 inc. delivery

RATING

Value 0  5
Performance 0  5

PROS

- ◆ Simple, robust and highly effective
- ◆ Maximises vacuum efficiency

CONS

- ◆ None: the results speak for themselves

FURTHER INFO

Oneida Air Systems Ltd
01473 827518
www.oneida-air.co.uk

Oneida Dust Deputy

ANDY STANDING



Andy Standing revs up a simple device that uses cyclone technology to improve workshop extraction systems

HOW A CYCLONE WORKS

The theory is that the airflow causes a spiralling action which effectively adds G-force weight to the dust. This alters the relationship between the particles and the velocity required to keep them airborne. As the effective mass of the particles increases, they drop out of suspension and fall into the dust drum below.

There can be few serious woodworkers who aren't aware of the dangers of inhaling wood dust. The majority will have a vacuum dust extractor in the workshop that can be connected to portable power tools to remove the dust at source. Unfortunately even the best of these machines will have its drawbacks.

The two main problems are lack of waste capacity, meaning that the machine needs frequent emptying during heavy use, and the fact that the filters will rapidly clog

with fine dust, reducing efficiency and possibly allowing dust to be released into the atmosphere. The Oneida Dust Deputy aims to solve both these problems.

The Dust Deputy is basically an interceptor bin that's connected between your vacuum and the power tool. It has a generous 45 litre (10 gallon) capacity. The design, appears rather basic with just a metal dust drum and lid. Mounted on top of the lid is a conical tower with a pair of hose connections. It's this component that's at the heart of the system and gives it its remarkable performance.

WW VERDICT

This is a remarkable piece of kit which really does work well. Using the Dust Deputy greatly improves the efficiency of your vacuum, increases your waste capacity and protects the filter in the vacuum, meaning that you can use your power tools for long periods safe in the knowledge that all the dust is being securely contained. I would recommend it without reservation.

ON TEST



As you may have already guessed, this is a cyclone, the device that James Dyson first brought to the nation's attention some years ago.

Testing it out

To test the Dust Deputy I began by emptying out the workshop vacuum and cleaning its filter. I then connected the hoses to the Dust Deputy and tried it out with a power planer, a router and finally a random-orbit sander to clean up a very messy piece of MDF.

After using it for some time, I checked the contents of both the Dust Deputy and the vacuum. I expected to find the planer shavings in the Dust Deputy but thought that the MDF dust would have made it through to the vacuum. Amazingly all the shavings and dust were contained and there was no evidence of any dust at all in the vacuum. Because there was no dust clogging the filter, this meant that, of course, there had been no loss of suction.



Connected up to the vacuum and planer



All the dust drops into the Dust Deputy, none in the vacuum

Proxxon

ON TEST

IAN WILKIE



Proxxon machines are well known for their tools and machines for miniaturists and hobbyists. Ian Wilkie has tested a couple of them

BBS/S block belt sander



PRICE: £89.25

RATING

Value 0 1 2 3 4 5
Performance 0 1 2 3 4 5

PROS

- Good dust extraction
- Quiet in use
- Quality carry case

CONS

- A bit expensive

SPEC SHEET

Power	150W
Belt speed	150m/min
Belt size	255 x 40mm
Sanding surface	60 x 40mm
Weight	700g
Accessories	Carry case, 5 x 120 grit and 6 x 240 grit belts

FURTHER INFO

Brilmac
0845 330 9100
www.brilmac.com

This is a compact mains block belt sander with a tough fibreglass-reinforced polyamide body that's insulated to class 2. It can either be held in the hand or clamped, belt up, to a workbench or tabletop; a screw clamp is provided. The sander has a dust extraction point with a pipe to fit a 34mm diameter extraction pipe end.

The belt is located flush on the left side so that surfaces can be sanded right down to the corner. The belts are held by spring clamps, so they're easy to fit or remove, and a tracking screw is provided. Five each of the 120 and 240 grit belts come with the product, and 80 and 180 grit belts are also available. Packs of five belts cost £4.50.

During the test the sander worked well. It was quiet to use and when fitted to an extractor only a little dust escaped. The sander comes packed neatly in a strong polypropylene carrying case.



A simple clamp secures the sander to the workbench when required

IB/E drill/grinder

This precision drill/grinder from Proxxon is ideal for miniaturists of all persuasions, and can be used single-handed for drilling, milling, grinding, sanding and engraving. The head is die-cast aluminium and the body fibreglass-reinforced polyamide.

The high-revving motor has full-wave electronic speed control and is usable for long periods. It drives a precision-ground steel shaft which runs in a ball race, minimising any play. The drill comes with six split steel precision collets from 1.0 to 3.2mm, a closure nut and various bits and cutters. There's a lock button to facilitate rapid cutter changing.

A loop handle fitted to the top of the machine allows the drill to be hung so that it can be used with a flexible drive shaft. The kit is contained in a dedicated strong, plastic storage case. It should be noted that other Proxxon chucks will not fit this tool.

PRICE: £64.28

RATING

Value 0 1 2 3 4 5
Performance 0 1 2 3 4 5

PROS

- Precise and accurate in use
- Smooth and vibration free
- Usable for long periods

CONS

- Other Proxxon bits won't fit

SPEC SHEET

Power	100W
Speed	500-20000rpm
Collet size	1, 1.5, 2, 2.4, 3 & 3.2mm
Weight	500g
Accessories	Carry case, 34 bits and cutters

FURTHER INFO

Axminster
0600 571822
www.axminster.co.uk



WW VERDICT

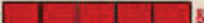
This is a strong, very precise and accurate drill/grinder which is smooth and vibration free and is a useful addition to any workshop.

WW VERDICT

This is a typical high quality product from Proxxon which is ideal for the boxmaker, modeller or toy maker, although it must be said it is rather expensive!

PRICE: £560

RATING

Value 0  5
Performance 0  5

PROS

- ◆ Superb build quality and small footprint
- ◆ Easily moved with optional wheel kit
- ◆ Very accurate when set up correctly
- ◆ Five year warranty

CONS

- ◆ On/off switch awkward to get at
- ◆ Crown guard obscures line of cut
- ◆ Some small details overlooked

SPEC SHEET

Power	1600W
Blade diameter	250mm
No-load blade speed	4000rpm
Max depth of cut	
at 90°	80mm
at 45°	57mm
Max width (blade to fence)	600mm
Weight	91kg



RECORD TS200C table saw

BEN PLEWES



Space is at a premium in a small workshop, as Ben Plewes knows only too well. But he thinks he's found the ideal table saw

The new Record TS200C table saw seems to offer an awful lot of machine for the £560 offer price (at the time of writing), which includes a wheel base and extension table. What sets it apart is increased capacity over the competition.

The TS200C has a 250mm blade which allows cuts to be made as deep as 80mm. Most table saws in the sub-£800 market have 200mm blades with typical maximum depths of cut of around 55mm. This is an impressive feature in itself, but when you

consider that the machine also boasts a solid cast iron table and the saw weighs in at 91 kg, it becomes clear why Record is redefining the boundaries of what is available in a £600 saw.

Add to this a powerful yet relatively quiet 2hp induction motor and a high-quality sliding beam setup, and you have the potential for a winning formula. The sliding beam, which allows for accurate and safe crosscutting, is constructed from a section of aluminium extrusion which sits

immediately left of the blade. The sliding beam can be locked in position via a locking lever at the front of the machine when ripping.

What about ripping?

Ripping timber and board material is catered for by the inclusion of a heavy-duty fence that's connected to a rail along the front of the saw table. The fence has two main components: a reversible aluminium extrusion which is fixed to a cast iron adjustment assembly with a built-in micro-adjustment mechanism. A measuring scale is also included which attaches to the front of the saw table. Adjusting the fence is easy, and the scale makes for fast and accurate cuts.

Avoiding kickback

What really turns this fence into a winner is the ability to adjust how far past the blade the fence sits. This is another

feature that is usually seen on industrial table saws. By pulling the rip fence back to a point just past the cutting area of the blade, material can be pushed free with a push stick as soon as it has been cut.

Without this feature, there's a risk of the blade binding with the material and throwing it back towards the operator.

Basic assembly

As with most machinery, setting up takes a while. I never rely on the factory settings in a situation like this. I prefer to reset all the components myself so that when it doesn't cut square I understand why, and can remedy the problem.

The first job is to assemble the stand and secure the saw to it. The second job is to align the cast iron table with the blade. This is done by loosening the cast iron table, then ensuring the table's edge is set at the same distance



The saw body is of fabricated steel



The rip fence assembly is connected to a solid steel rail at the front



The crosscutting assembly is attached to the sliding beam



The foot locking pedal raises the saw bench onto wheels



The long crown guard makes sighting the line of cut difficult

from the blade at its in-feed and out-feed points.

Fitting the rip fence

Next comes fitting the rip fence assembly, which requires some tweaking so that the fence lies perfectly parallel to the blade. The measuring scale is added at this point too. Surprisingly, there is virtually no lateral movement built into the measuring scale, which is an aluminium extrusion with measuring tape stuck to it. As a result, the measurement readings are about 0.5mm out on my saw... that is, until I get a file on the job to turn those non-adjustable holes into adjustable slots!

Setting the sliding beam

The last major job is to fit and set the sliding beam. Record has come up with a clever way of adjusting the beam, which runs on four rubber-wheeled bearings. The two inner wheels are height-adjustable and locked in place with a simple locking nut. The two outer wheels have a built-in cam action which, as well as being height-

adjustable, can be turned to take up any play in the running assembly. It is quite fiddly to adjust and set up initially, but time spent here will be time well spent.

Crosscutting assembly

The crosscutting assembly that fits into the sliding beam is a little disappointing. Two fiddly kip fasteners are supplied, one of which is supposed to lock the angle while the other is to lock the position along the sliding beam. In reality they both lock the position on the sliding beam, which makes it impossible to move without changing the angle of cut, albeit by a fraction. This is annoying, especially after spending time setting up a precise crosscut angle. But it's another feature that can be fixed with a bit of time.

The saw in use

Using the machine is a joy. The rip fence is solid and easy to adjust. The sheer weight of the machine reduces vibration and gives the saw a very solid feel while cutting. The 2hp induction motor creates more

noise than other similarly priced induction-driven machines, but it's still relatively easy on the ears and offers superior performance. The blade is quick to stop when switched off. The rise-and-fall wheel works well, as does the tilt arbor mechanism with its handle located on the right side of the table saw housing.

Four gripes

I do have a few gripes, however. Firstly, the position of the on/off switch, which is located on the left side of the saw housing, can be awkward to get to when cutting sheet material.

Secondly, the crosscut fence feels a bit flimsy and can't be removed without adjusting the angle of cut.

There is a stop to provide a constant angle, but generally these are ineffective if you're trying to achieve very accurate cuts. I'd rather set the fence up once and then leave it locked.

My next gripe is the crown guard, which protrudes a good way in front of the blade and makes sighting a line of cut difficult.

Last gripe: the wheel base would be more versatile in tight spaces if all four castors rotated instead of just two, which makes manoeuvring in really tight spots tricky.

FURTHER INFO

Record Power

08707 701777

www.recordpower.co.uk

WV VERDICT

Record have got the fundamentals of this machine just right. What's lacking in the details can be made up for with a bit of time and ingenuity. I've come to this saw from a Kity 419, which is about a quarter of the weight and has an 8in blade and a smaller motor. While the Kity is quieter, that's where its advantage over the Record stops. The Record is streets ahead in virtually all other areas: it has a smaller footprint and actually costs less!



ON TEST

PRICE: £39

RATING

Value 0 5
Performance 0 5

PROS

- Well made, easy to use and confidence inspiring

CONS

- The cutter can cut through the waster and into the jig

SPEC SHEET

Max timber width	100mm
Max timber thickness	30mm
Min timber thickness	15mm

FURTHER INFO

Trend Machinery
0800 457363
www.trend-uk.com

TREND push block

PETER DUNSMORE



Trend has developed a jig for scribing the ends of rails safely and accurately. Peter Dunsmore has tried it out

Making cabinet doors using a profile and scribe cutter on a router table is one of those jobs that I tend to put off, as it always appears to be a fiddly job. In reality, after spending a few moments setting the cutter accurately, is relatively easy to achieve.

However, one aspect I always found a little tricky was scribing the ends of the rails. I used the sliding fence as a support, with a scrap piece of timber as a waste piece, but I was always having to position the timber carefully because its end must run across the bearing on the cutter. This method works satisfactorily, but doesn't particularly inspire confidence.

Now Trend has come to the rescue, with a jig specially designed for scribing the ends of rails safely and accurately.

The base of the jig is made from 8mm thick plastic,

ensuring an accurate flat base onto which the adjustable-height toggle clamp secures the timber. The sliding front stop has an abrasive aide to provide further grip on the timber. There are two comfortable handles so you can hold the jig securely.

Using the Jig

The jig slides against the fence on the router table, so it's important that the bearing on the cutter is level with the front of the fence to begin with. Holding the jig against the fence and then locating the end of the rail against it ensures the timber is located accurately every time.

The timber to be scribed is held in place on the jig using the toggle clamp. To reinforce the grip, the sliding stop is locked against the timber by loosening the hand grip, positioning the stop against the rail and then tightening the handle. To protect the jig,



The handles make it easy to control the jig

you can screw a piece of scrap timber to act as a waster onto the block underneath the toggle clamp using the screws and tapped holes provided.

The jig should be pulled away from the fence once the scribe has been cut to prevent the cutter damaging

the block on the jig base; however, this can be avoided if a sufficiently wide waster is used. It will also be noticed from the photograph that there is a further tapped hole into which the front handgrip can be secured. This is to enable the jig to be used with an overhead router if needed.

WV VERDICT

All in all this is a well-made jig that should find a place hanging on the wall next to the router table in most workshops where profile and scribing is regularly carried out.

PRICE: £162

RATING

Value 0 5
Performance 0 5

PROS

- Excellent performance
- Comfortable ergonomics
- Adjustable mouth

CONS

- Limited lateral blade adjustment

FURTHER INFO

Workshop Heaven
01295 780003
www.workshopheaven.com



The lever cap knob, lever cap and depth of cut adjuster



ON TEST

Veritas low-angle jack plane

BEN PLEWES



Following our test last month of the Veritas apron plane, Ben Plewes takes its bigger brother Jack for a run along the bench

The Veritas P3401 low-angle jack plane offers several benefits over a regular No.5 model. Because of the low blade angle, the plane doesn't require a complicated frog assembly. This decreased component count means the production cost is kept down compared to a regular No.5.

Even more importantly, the lower angle blade offers different characteristics to a normal high-angle jack plane. Difficult grain is easier to work and you get better results on end grain with less effort.

On the downside, the omission of a frog means that lateral blade adjustment is greatly reduced. Veritas have provided a couple of grub screws, one on either side of the blade, to fine-tune its lateral position. In reality this means that you have to take extra care to keep the blade edge square when grinding and sharpening it.

Adjusting the mouth

A nice feature of the Veritas plane is its adjustable mouth. By reducing the gap between the mouth and blade, you can take a finer shaving when planing. This is especially useful when planing tricky grain or when you want to achieve the finest of surface finishes. This works the other way round too; if you want to use the plane for more rapid removal of stock, the mouth can be set with a larger gap which in turn allows a thicker shaving to be taken.

There's a knurled brass set screw near the front of the blade which provides a stop for the adjustable mouth. When set, this ensures that the adjustable mouth doesn't bind with the blade when clamped in position. The front handle is rotated anti-clockwise to loosen the mouth assembly, which in turn is adjusted to the desired position. The handle is then



The top screw holds the lever cap in position, while the front screw is the mouth adjustment screw stop

re-tightened to lock the mouth width. In practice this works very well.

Planing away

Using this plane is a delight. It has good balance and feels very responsive. The ergonomics are particularly good. When planing edges, instead of holding the front handle, I tend to use the fingers of my left hand as a kind of fence against the wood underneath the plane,

with my thumb exerting pressure on the front of the plane's body just in front of the mouth.

With some planes this can be awkward, depending on the shape of the casting. With the Veritas, the technique works particularly well. The casting is enlarged behind the front handle, which is exactly where my thumb naturally rests. The extra material there makes up part of the mouth adjustment mechanism, but it also has the benefit of making the plane more comfortable to use in different situations, and therefore more versatile.

Component quality is superb all round. The castings are flat and square out of the box. The hardwood handles are well made and very comfortable to use. Solid brass fittings complement the thick castings and machined steel parts. And the 2 1/4in wide blade is made of A2 tool steel hardened to R60-02, ensuring that a good sharp edge can be achieved and kept for as long as possible.

WV VERDICT

All in all this is a superb bit of kit and well worth the investment. It's a versatile tool and the provision of a high quality adjustable mouth really is the icing on the cake. However, if you're considering this plane, be sure to look at the Lio Nielsen low-angle jack plane too.

MACHINERYCHECKLIST

6: Random orbit and palm sanders

MAKE & MODEL		FEATURES				
RANDOM ORBIT SANDERS						
		Power (watts)	Disk diameter (mm)	Weight (kg)	Accessories	Price
Erbauer	ERB-CDS 3D	180	n/a	2.1	sanding disc	£19.99
Ryobi	ERO 2412V	240	125	1.7	storage case, dust bag	£23.91
Amminster	RAS 125	430	125	2.2	storage case, dust bag	£29.98
Erbauer	ERB300XP	300	125	2.1	storage case, dust bag, dust box, sanding disc	£29.99
Draper	PT125V	480	125	1.3	dust bag	£30
Draper Expert	RS230K	230	125	1.4	storage case, sanding disc	£34.95
Skil	7402	270	125	1.3	dustbox, sanding disc	£39.99
Skil	7450	430	125	2.3	storage case, sanding disc	£50
Bosch	PEX400AE	400	125	1.9	micro filter dust box	£51.75
De Walt	DW423	220	125	1.5	dustbag, vacuum adaptor	£60
Metabo	SXE 425	400	125	2.2	dust bag	£78
Makita	BO5012	220	125	1.2	dust bag	£89.95
Ryobi One+	Cru-180M	18V	125	2.2 (inc battery)	sanding disc	£100 (inc battery)
Festool	Rutex RO150	720	150	2.3	storage case, sanding disc	£442
PALM SANDERS						
		Power (watts)	Plate size (mm)	Weight (kg)	Accessories	Price
Einhell	BSS105	105	140 x 95	1.4	storage case, vacuum adaptor, selection of abrasives	£16.95
Ryobi	EOS-2410N	240	115 x 108	1.5	storage case, dustbag, perforating plate, selection of abrasives	£25.99
Draper	PT200	200	112 x 104	2.0	dustbag, selection of abrasives, perforating plate	£31.95
Makita	BO4553	160	116 x 104	0.95	dustbag, selection of abrasives, perforating plate	£47.99
Bosch	GSS 140A	180	113 x 105	1.4	dustbox, selection of abrasives, perforating plate	£56.40
De Walt	D26441	230	115 x 105	1.4	dustbag, selection of abrasives, perforating plate	£69.99
Metabo	FSR 200 Intec	200	114 x 102	1.25	storage case, dustbox, selection of abrasives, perforating plate	£72.95
Festool	RTS 400EQ	200	130 x 80	1.1	storage case, dustbag	£173.90

Looking for new kit for your workshop? Our reference section brings together details of all the wood-working machines we've tested in recent years that are still available today. This month's checklist looks at random orbit and palm sanders, with a total of 22 models featured. It includes ● a specification summary ● the current price ● manufacturer contact details, including website addresses ● our verdict on the machine ● the issue of *The Woodworker* (or in some cases, *Practical Woodworking*) in which we originally reviewed it, so you can re-read the full test report if you wish

■ NEXT MONTH
Machinery Reference 7 rounds up biscuit, domino and dowel jointers

FURTHER INFO		VERDICT		
Contact	In our opinion	Rating (out of 5)	Tested	
Screwfix Direct 0500 414141 www.screwfix.com	Unusual palm sander incorporating three small rotating disc sanding heads. Very aggressive action. Good for shaping and coarse work	3½	May 2005	
Ryobi 01628 894400 www.ryobipower.co.uk	Keenly priced random orbit palm sander. Variable speed and rubber insulated grip make it versatile and comfortable	4	Jan 2006	
Axminster 0800 371822 www.axminster.co.uk	An efficient machine with a rubberised body and good dust extraction. Let down by rather high level of vibration	3	Jan 2006	
Screwfix Direct 0500 414141 www.screwfix.com	Unusual machine supplied a small plastic dustbox and a large cloth bag, can be connected to workshop vacuum. Smooth running and efficient. Good value. Tested in <i>Practical Woodworking</i> , Feb 2007	4	Feb 2007*	
Draper 02380 494333 www.draper.co.uk	Adequate but unremarkable machine best suited to the occasional user. Robustly made, though not as smooth-running as some	3½	Jan 2006	
Draper 02380 494333 www.draper.co.uk	Well designed tool with padded grip and smooth-running motor	4	July 2007	
Skil 01895 838791 www.skileurope.com	Palm-sized sander with variable speed. A reasonable performer for a realistic price	3½	Feb 2006	
Skil 01895 838791 www.skileurope.com	Well designed sander with efficient filtered dust collector and variable speed. Fitted with unnecessary pressure indicator	3½	Oct 2007	
Bosch 01895 838743 www.boschpowertools.co.uk	A well made machine with comfortable handles and variable speed. Incorporates Micro Filter dust extraction box with paper filter. Well-balanced and smooth-running. A pleasure to use at an attractive price	4½	Jan 2006	
DeWalt 01703 332555 www.dewalt.co.uk	A robust and capable machine equipped with dust bag incorporating integrated vacuum adapter. Good quality tool. Ideal for site use	4	Jan 2006	
Metabo 02380 732000 www.metabo.co.uk	A high quality machine with well-designed body and disposable dust bag. Integrated dust extraction adapter. Very smooth-running and comfortable to use	4	Jan 2006	
Makita 01908 211678 www.makita.co.uk	High quality pro palm random orbit sander. Smooth and powerful with variable speed and disposable dust bags	4½	Jan 2006	
Ryobi 01628 894400 www.ryobipower.co.uk	Cordless sander supplied without batteries. Reasonable performance. No dust bag or extraction. Tested in <i>The Woodworker</i> Autumn Special 2007	3½	AS 2007	
TTS Tooltechnic Systems GB Ltd 01284 780791 www.festool.co.uk	Top quality pro dual action gear drive random orbit sander. Use for coarse shaping, sanding and polishing. Faultless performance. Seriously professional price	4	Nov 2006	
Contact	In our opinion	Rating (out of 5)	Tested	
Toolbank 0800 068 6235 www.toolbank.com	Budget priced palm sander with delta-shaped sanding plate. No dustbag, but vacuum adapter included. Good for occasional use	3½	March 2007	
Ryobi 01628 894400 www.ryobipower.co.uk	A smart and well-made machine for a bargain price. Good performance and comfortable to use	4½	March 2007	
Draper 02380 494333 www.draper.co.uk	Budget priced sander with powerful motor. Good value, though tiring to use	4	March 2007	
Makita 01908 211678 www.makita.co.uk	Sturdy workmanlike machine ideal for site use, though supplied with a surprisingly short cable	4	March 2007	
Bosch 01895 838743 www.bosch.co.uk	High quality pro machine with Micro Filter dust collection. Efficient, well-made, competitively priced and comfortable to use	4½	March 2007	
DeWalt 01753 567055 www.dewalt.co.uk	Solid professional machine with rubberised grip and tubular dust bag. Integrated vacuum adapter	4	March 2007	
Metabo 02380 732000 www.metabo.co.uk	High quality machine with comfortably shaped body and efficient dust collection. Very smooth running	4½	March 2007	
TTS Tooltechnic Systems GB Ltd 01284 780791 www.festool.co.uk	A top quality pro sander. Variable speed and impressive dust collection. Versatile but pricey	4	March 2007	

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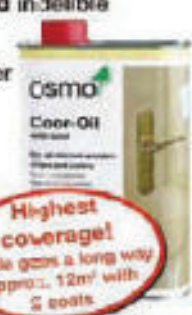
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MARCH 2007

PROJECTS: Oval dresser box, Kitchen ladder units
FEATURES: Handling sheet materials, Typisan carving festival, Investing in forestry, Secret drawers p13. This is a workshop, how mighty combi sanders, Wicker coffins, Roundabout dovetails
TESTS: Giant test: pro palm sanders, Six of the best: utility knives, Ryobi ones-a-kit, Freud FT3000 router, Draper diamond wheelbarrow set, Makita impact driver, Sawjive 400EL router
TURNING: Candlesticks, Traction engine, Towel rail



APRIL 2007

PROJECTS: Low dresser, Cherry bed, Black Forest stool
FEATURES: Saw blade test, Handcar dovetails, Planemaking p11: metalwork, Ally Pally review, Secret drawers p14, Iron mighty dust extractors
TESTS: Giant test: becal joiners p11, Dewalt dovetail jig, Bosch PSR 14.4 drill driver, Sordy Speedgo sharpening system, Behlen sealers, Amisler rolling rule, LED light
TURNING: Ering stand, Shaker ring-headed knob, Elm platter



MAY 2007

PROJECTS: Planemaking p12: rebate plane, Smoker case, Carving flowers, Wild's nesters p11, Jewellery box
FEATURES: Bookmaking, Why buy a mini-jointer?, Close fitting lock, Feather miles, Allergies, Mike black tune-up
TESTS: Giant test: becal joiners p12, Dremel scroll saw, Bosch SP600 router, Metabo multihammer, Delta hold downs, Faithful wheel dresser, Zone razor saw
TURNING: Guide: Split hollow form techniques, Planing & colouring, Finkels



JUNE 2007

PROJECTS: Kitchen dresser, Wildlife nesters, Bell-top clock, Oak laminated door
FEATURES: Mince & fowls, Plane making part 3, French polishing
TESTS: Giant test: Small routers, Draper Expert circular saw, Wolfart depth stops, Sawjive digital calliper, Amisler work lights, Delta rounders & rollers, Draper wire, Japanese saws, Metabo SCM saw, Jessum Paul R LHF, Wire saw blade group test, Six of the best: Paintbrushes
TURNING: Making wooden chucks, Drinks coasters



JULY 2007

PROJECTS: Tall-front bureau, Mobile joiner stand, Oak dining table, Wildlife nesters
FEATURES: Routing with a multi-profile cutter, Plane making part 4: The last plane
TESTS: Giant test: Planer-thicknessers, Amisler planer, Japanese chisels, Sawjive letter number stamp set, Faithful sawtooth bit set and carpenter's brace, Draper Expert sander, Amisler bench dogs, Metabo bench thicknesser, Bosch sliding mitre saw, SP 120 mitre saw, Machine-thin saw gauges, Six of the best: Toolbits



AUGUST 2007

PROJECTS: Welsh dresser, Box clamping jig, Country-style table, Picture frame, Arts & Crafts headboard
FEATURES: Planemaking part 5, Upgrading your grinder
TESTS: Giant test: Cordless jigsaws, Faldut woodworking machine, Draper Expert belt sander, Forge Steel saw, Amisler workshop magnet, Delta mini vice, Erbauer percussion drill, Amisler corner chisel, Faithful screw-on set, Delta angle gauge, Festool Kapek sliding mitre saw, GMT router. Six of the best: Work gloves



SEPTEMBER 2007

PROJECTS: Writing slope, TV cabinet, MDF bed base
FEATURES: Planemaking part 6, Getting the best from your scroll saw, Air filter sander
TURNING: Pearwood scoop, Table tops, Unusual chucks
TESTS: Giant test: Combination sanders, Rage 3 mitre saw, Jet bench thicknesser, Festool circular saw, Woodstar router table, Draper combi cut enter, Delta mini square, Bull chisel set, Amisler punch set, Forge Steel laser, Pick-up tool set, Bull saw, Zisser shelling spray, Vexley file carvers, Tormek Truing tool, Router base guide, Six of the best: Extension rails



OCTOBER 2007

PROJECTS: Oak display cabinet, Ruled table, Chest of drawers restoration
FEATURES: Bench-top router jig, Planemaking part 7, A brief history of screws
TURNING: Off-centre chucks, Rollunda moneybox, Trimmies
TESTS: Giant test: Wheelstone grinders, Hammer bandsaw, S&S grinder, Draper jig saw, Amisler storage, Ryobi One-Drive drill/bits, Irwin wood bits, SMI sander, Delta polishing kit, Festool TGS saw blades, Amisler and S&P dust extractors, Bosch palm router, S&P bandsaw, Six of the best: Mallets
NEW MACHINERY CHECKLIST



NOVEMBER 2007

PROJECTS: Veneered side table, Inlaid carking, Mantel shelf, Rafe paint windows
FEATURES: Doweling, Planemaking part 8, Thicknesser jig
TURNING: Bench horse, Bent oak bowl, Sanding on the lathe, Flutes and grooves
TESTS: Giant test: Joiners, Miller dowel system, S&P scroll saw, Work circular saw, Anant rebate plane, Bosch sander Ryobi One-Drive, Irwin wood bits, Forge Steel planes, Hitachi circular saw, Draper hestles, Schopbach table saw, S&P planer/thicknesser, Metabo bench thicknesser. Six of the best: Counterdrills
MACHINERY CHECKLIST



DECEMBER 2007

PROJECTS: Mahogany table clock, Oak coffee table
FEATURES: Designing a router table, Planemaking part 9, Routing accurate joints
TURNING: Cherry and mahogany clocks, Collet chucking techniques
TESTS: Giant test - Circular saws, S&P spindle moulder, Tormek sharpening system, Hitachi laminate trimmer, S&P and Drapersaws, Black & Decker drill, Dremel MultiMax, Forge Steel block plane, Inno gauge 7 rules, Metabo planer thicknesser, Schopbach sandblow, Erbauer combi kit. Six of the best: G clamps
MACHINERY CHECKLIST



JANUARY 2008

PROJECTS: Writing slope, Miniature chest
FEATURES: The Harp maker, Building a router table, Drawer details, Woodies on the web
TURNING: Rugby ball hoop, Nup tree, Routing on the lathe
TESTS: Giant test - Bench mortisaws, Makita planer, Delta brass mallet, Amisler sanding bars, Draper bracket, Irwin tablesaws, Erbauer combi drill, Faithful sash cramps, Hermer sanding discs, Wenz drill, Woodstar and DeWalt table saws, Black & Decker Anteelect tools, JCB router and bit, Veritas apron plane, Six of the best: Ear defenders
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1 Forge Steel Toolbox Saw

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Screwfix Direct ☎ 0500 414141 ☐ www.screwfix.com

A nicely made saw with a 355mm (14in) blade, which is comparatively coarse (9 TPI) and is well shaped with a comfortable rubber insert. The stiff blade has conventional hardened teeth and gives a fairly fast cut.



2 Screwfix Toolbox Saw

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3 Stanley Jetcut Toolbox Saw

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Stanley ☎ 0114 244 8883 ☐ www.stanleyworks.co.uk

This high-quality line-cut saw has a 380mm (15in) blade with 11TPI. The blade is stiff with hardpoint teeth, and cuts fast, on both pull and push strokes. A very well-shaped handle with a thick rubber insert provides a firm, comfortable grip. The handle will mark out 90° and 45° angles. An attractive and efficient tool.



4 Bahco Prizecut Toolbox Saw

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Screwfix Direct ☎ 0500 414141 ☐ www.screwfix.com

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5 Irwin Toolbox Saw

Price: £7.99

Toolbank ☎ 0800 068 6238 ☐ www.toolbank.com

Another slimline saw, similar to the Bahco, with a 335mm (13in) hard tooth 12TPI blade giving a good quality cut. Its well-shaped handle has a smooth soft-grip insert, making it comfortable to use. The handle will mark out 90° and 45° angles. The flexible blade can bind in the kerf occasionally, but overall a good linecut saw.



6 Axminster Toolbox Saw

Price: £4.75

Axminster ☎ 0800 371822 ☐ www.axminster.co.uk

A well made saw with 350mm (15in) blade and razor sharp hardpoint teeth with 11TPI. It cuts rapidly producing a high quality finish. The large, moulded handle has a rubber insert. Will mark out 90° and 45° angles. Very similar to the Stanley but slightly faster cutting and more comfortable to use. This saw is the best of the six saws here, and also represents the best value for money.

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www.felder-group.co.uk



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No DVD included!
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Headquarters/Showroom: Unit 2, Sovereign Business Park,
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info@felder-group.co.uk

RECORD POWER

SHEFFIELD - ENGLAND®

nova series

Heavy Duty Eight Speed Lathe 1624-44

THIS YEAR'S HOT NEW PRODUCT IN THE U.S. (THE LARGEST AND MOST COMPETITIVE WOODTURNING MARKET IN THE WORLD) THE 1624-44 IS NOW READY FOR ITS UK LAUNCH!



KEY SPEC

BETWEEN CENTRES: 610mm extendable to 510mm auto
 SWING OVER BED: 400mm
 MAX BOWL DIAMETER: 740mm
 MOTOR: 1.5hp
 SPEEDS: 8 speed - 178, 300, 571, 850, 1200, 1800, 2400, 3000 rpm
 SIZE: W1330mm x D450mm x H880mm
 WEIGHT: 114kg including stand
 SPINDLE THREAD: 1 1/4" x 8 TPI
 TAPERS: No. 2 MT

NEW!

WINTER SPECIAL

SAVE OVER **£250**

1624-44 LATHE RRP £799.99

PLUS CR3000 Outrigger RRP £165.99

PLUS 25058 Stand RRP £149.99

PLUS Supamark Chuck with Insert RRP £140.00

DEAL PRICE
£999.99 INC. VAT

KEY FEATURES

- SOLID CAST IRON CONSTRUCTION THROUGHOUT
- BED LENGTH EXTENDABLE
- POWERFUL 1.5HP MOTOR

Heavy Duty Variable Speed Lathe DVR-XP

THE NOVA DVR IS THE WORLD'S FIRST INTELLIGENT LATHE, COMBINING THE BEST FEATURES OF CONVENTIONAL LATHES - POWER, CAPACITY AND CAPABILITY - WITH STATE OF THE ART TECHNOLOGY TO MAKE YOUR TURNING SAFER, MORE EFFICIENT AND FUN!



Shown with optional CR3000 Outrigger and Supamark Chuck

KEY SPEC

MAX BETWEEN CENTRES: 600mm extendable to 510mm auto
 SWING OVER BED: 400mm
 MAX BOWL DIAMETER: 740mm
 SPINDLE SPEEDS: 100-3500 rpm
 MOTOR: 2hp
 WEIGHT: 220kg (lathe only)
 SPINDLE THREAD: 1 1/4" x 8 TPI
 TAPERS: No. 2 MT

NEW!

WINTER SPECIAL

SAVE OVER **£250**

DVR-XP LATHE RRP £1595.00

PLUS CR3000 Outrigger RRP £165.99

PLUS 25058 Stand RRP £149.99

PLUS Supamark Chuck with Insert RRP £140.00

DEAL PRICE
£1799.00 INC. VAT

KEY FEATURES

- SOLID CAST IRON CONSTRUCTION THROUGHOUT
- BED LENGTH EXTENDABLE
- USER FRIENDLY WITH MANY UNIQUE FEATURES
- POWERFUL 2HP MOTOR

FOR FURTHER DETAILS OR TO ARRANGE A DEMONSTRATION:

Go Online: WWW.RECORDPOWER.CO.UK

- Find a local stockist
- Find a demo or show near you
- Contact us to arrange a demo for you

or contact: Record Power Ltd, Unit B Inland Industrial Estate
 Adolph Way, Staveley, S43 8LS

Telephone: 0870 770 1777

Email: sales@recordpower.co.uk

Facsimile: 0670 770 1888

<http://www.recordpower.co.uk>