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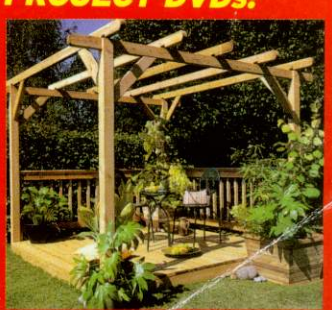

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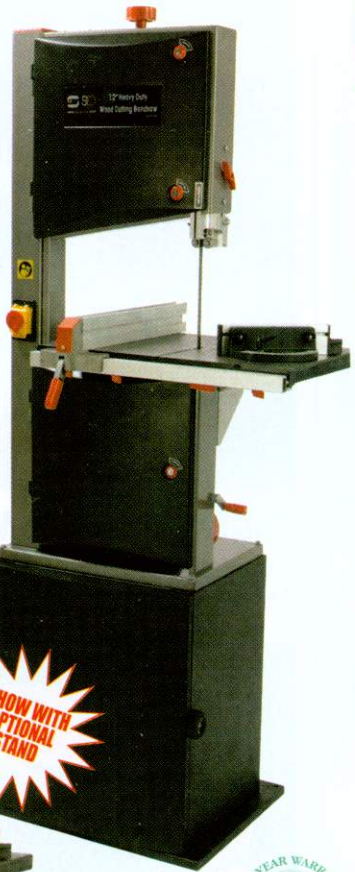

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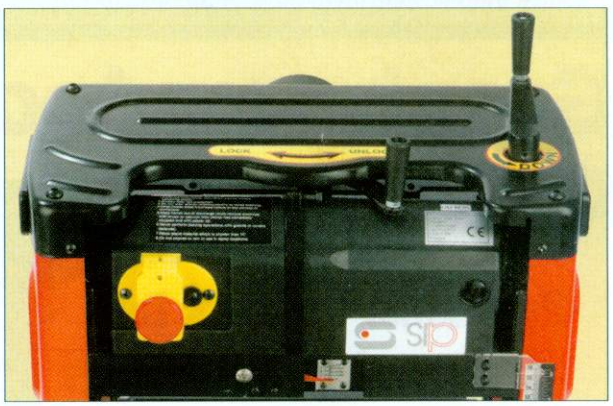

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Conte

We aim to offer the best advice, projects & techniques, plus the most authoritative tests. All testi

Furniture design certainly never seems to stand still. This is evident from the student work that emerges at this time of the year from college furniture-making departments across the country. Recently I visited *Chairs 2004*, the Symposium and exhibition for chairmakers, held at Westonbirt Arboretum. There were some stunning examples from top international makers, made in all sorts of materials. We'll be bringing you a news story about the event soon.

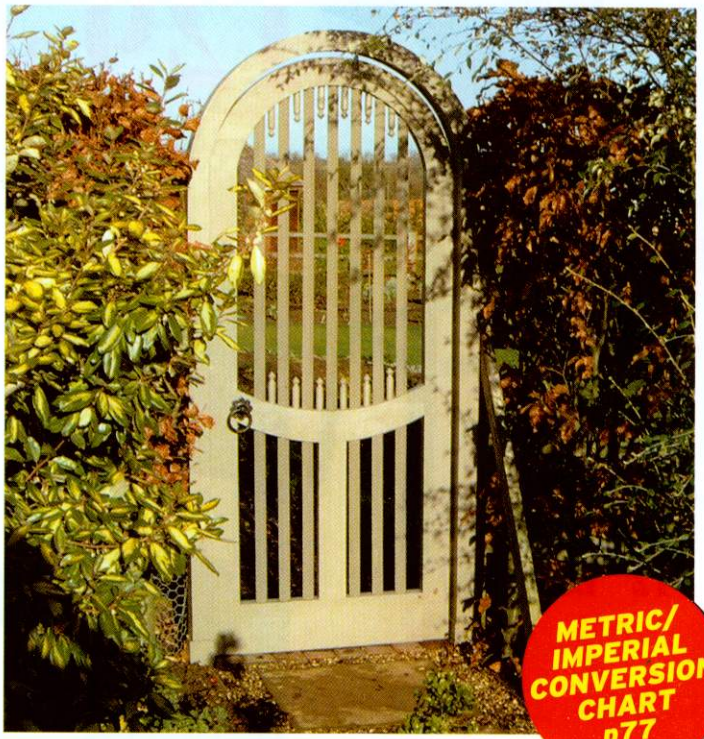
Westonbirt is one of my favourite haunts, no matter what the weather is like. Talking of which, the projects in this issue have an outdoor flavour, so there's no excuse not be out in the garden. To help you make the most of it, we have 120 prizes to win this month, whether you're working indoors or out!

Phil Davy
Editor

Next month

Win a workshop full of JET machines!

Check out our new website: *www.goodwoodworking.co.uk*



METRIC/ IMPERIAL CONVERSION CHART p77

Highgrove heaven

Make this great garden gate based on one found in the gardens of Prince Charles' country home ***p10***

Great new tools on test...

Panasonic Cordless Drill

Is this the highest capacity drill on the market today? We reckon so... ***p16***

Two garden benches *p28*

Perform planers

Planer thicknesser versus planer and thicknesser. Read what we think ***p54***

Wind in the willow

Bring the soothing sound of wind chimes to a quiet corner of your garden with our turning project ***p78***

Ryobi Mitre

Big capacities, user friendly, tilts both ways – are we talking Ryobi here? ***p17***

Top jigs

Workshop Angles visits Tim Phillips, violin maker ***p23***

nts

independent, based on years of experience

OUTDOOR SPECIAL
- ✓9 top projects for you to have a go at
- ✓Full pull-out plans for this garden picnic table
- ✓Turning for the garden
- ✓Tips for outdoor woodworking

Garden picnic table

Feed all the family around this classic outdoor table ***p6***

PROJECTS

FEATURES

TURNING

REGULARS

TOOL TESTS

Whirly

Build this super wind-powered automaton ***p82***

Green seat

Build this gazebo in just 14 hours ***p42***

Win!

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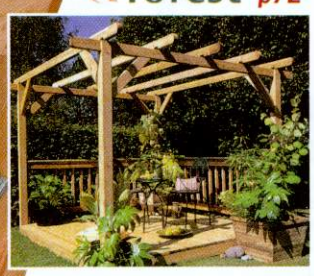
forest ***p72***

p72



Win!

50 TINS OF RUSTINS OUTDOOR VARNISH TO WIN! ***p80***

See our free pull-out plans for this project on page 49!

Picnics in the round

Rob Wolton takes inspiration from a visit to Ireland to design and build a circular picnic table with easy access to the seating

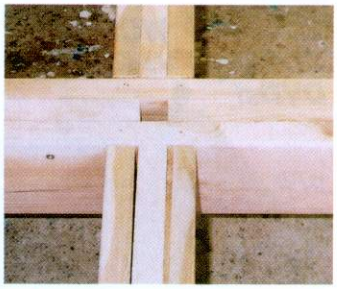
I work part time for a charity organisation called Acorn which was set up for people with learning difficulties, some of whom are also physically challenged. The organisation is situated in Essex and has a large woodwork shop where garden furniture, bird houses and boxes are made, and local furniture repaired and refurbished.

In 1987, after the great October storm, a large cedar of Lebanon tree was blown down in the grounds and a 2.4m piece of the trunk was saved and planked. Some of the planks were 75mm thick and 300mm wide, while others were the same width and 38mm thick. These were stored properly under cover and have seasoned quite nicely.

During the summer of 2002, I was on holiday in Southern Ireland when I came across a circular picnic table with integral seats. Like a lot of other chippies, I am always on the look out for

Constructing the cross beams and legs

01 The main crossed support consists of two pairs of timbers sandwiched around a spacer of the same thickness



02 These are jointed in the centre with a half lap joint secured by two wood screws

03 The four legs bolt in position between the pairs of cross beams using 110x10mm bright coach bolts

04 The exact position of the legs in the cross beams is determined by the 1200mm circle marked on the beams

things to make and with this view in mind I took a photograph of it.

Access to such a table with its separate seats is much easier than the conventional picnic table where one has to lift legs over the seat. Disabled people could also use this seat fairly easily.

I did not have a tape measure with me so I was unable to take any dimensions but the table looked to be about 1.2m in diameter so, on this basis, I eventually set about preparing a drawing based on this one measurement. I drew two circles, one at 1.2m and the other at 2.4m, and using the photograph as a general guide, came up with a drawing which is quite simple and straightforward.

With the timber that I had, I converted it all into 150mm wide by 32mm thick – an approximate standard for softwood purchased as planed all round (PAR) from a timber merchant.

Constructing the table

1 The first step is to cut four 2.4m lengths exactly the same, with 10-20° splayed ends on each. These are then set out to form the square or cross using a 96mm wide half lap joint in the centre, half the depth of the timbers (75mm), which would eventually be secured with two 100mm No10 wood screws from the underside. These screws should be left out until the final stage as the four lengths are not only awkward, especially if you have a small workshop, but are heavy as well.

2 At this point, have a dry run and place the four main beams on the workshop floor in the cross position. Put some scrap pieces of 32mm in between each of the lengths and hold with four G cramps. Next cut a small square of thin ply, about 100mm square, and tack this temporarily to cover the centre, where, with a panel pin in the centre, it will form a pivot for a crude compass.

Either use a long thin batten or a piece of string to describe circles for the table top and bench seats. I used a batten with a panel pin for a pivot and a notch cut in the end to steady the pencil. Mark out three circles across the four main beams, one at 1200mm, one at approximately 2000mm and one at 2400mm. This will give you a guide as to where the various seat tops and the main table top will be situated.

3 Next, cut four 710mm long table legs from 75x32mm timber. Round off the edges with a half round-over bit in the router. (I also did this with all the other seat and table top pieces, to give the project a more professional look and prevent edges and corners being knocked off with constant use.) Then bolt all four legs in position between the pairs of cross beams using 110x10mm bright coach bolts with nuts and washers, two bolts in each leg. The legs should project below the bottom of the cross beams by some 250mm, with their exact position determined by the 1200mm circle marked on the beams. Two legs will be under the centre of the table top and two will be under the two outer semi circle tops.

4 Now fill in the gaps between the main beams either side of the legs with lengths of 50x32mm timber aligned along the top edges of the beams. This has the effect of strengthening the legs from sideways movement if the table is moved and it tidies up the look of the beams. I screwed these pieces in from either side.

The four end pieces that fall under the seats are cut separately, for the seats to be fitted on last of all. These are some 400mm long and are bolted in place using two

Make sure that you use bright zinc plated or similar coach bolts to prevent rusting

110x10mm coach bolts in each length. Bolt them in but do not put the nuts and washers on yet – the bolts alone will hold the bearers in place.

5 At this stage I rounded off the tops of the beams with the router, with the exception of the area under the seats. I found also that it is a good idea to either chamfer or round off the ends of the legs, as it makes it easier when lowering the table top down on to the legs. The chamfers will then act as a guide and save using a big mallet to assist the top down.

If you wish you can now dismantle the large cross and set it on one side in preparation for the next stage.**6** Next up is the circular top. Cut seven lengths of 150x32mm approximately to length; three will be 1200mm long, two will be about 1170mm and the two outer pieces will be about 850mm. Lay them out on a flat surface separated by six pieces of scrap batten some 30mm thick, and temporarily cramp them all together with a strap clamp. Mark the centre of the middle board then, with the thin batten and panel pin, describe a 1200mm

TOOLS YOU'LL NEED

Circular portable saw or handsaw to cut the 75x32mm legs and battens.
Router with a round over bit.
Electric drill or hand brace for the boltholes.
Cordless screwdriver
Strap clamp for a 1.2m circle

PROJECT GUIDE

Difficulty
Simple
Time
30 hours
Type
Garden furniture
Costs
Approx £98 for softwood PAR, or £80 for treated decking timber

05 Then fill the gaps between the beams either side of the legs with lengths of 50x32mm timber

06 The circular top is made from 7 lengths of 150x32mm, cut to shape with a jigsaw and then cleaned up

07 Support battens on the underside hold the top together and also locate over the legs

08 Additional short battens are added where the table legs meet the table top and bolt into place

MATERIALS YOU'LL NEED

Timber
approx 31 metres of 150x32mm timber

Hardware
20 110x10 bright coach bolts, nuts and washers
One box of 5x60 Screwfix Goldscrews
One box of 4.5x50 screws
Two 100x10 screws

CUTTING LIST

For a full cutting list turn to the pull-out plans on page 49

circle around the seven boards.

Cut these into shape with either a jigsaw or bandsaw and clean them up. Round off all the edges and ends. When done, cut a 30mm diameter hole in the centre of the middle board for a sunshade pole.

7 Turn each board over so that the best side is down, replace the scrap battens in between each board, and reclamp using the strap clamp. This will hold them all in nice and tight while the support battens are screwed on. Cut two 50x32mm battens and screw them on the underside of the middle board 32mm apart (16mm either side of the centre line). Use a scrap piece of 32mm to do this – don't rely on a measure. Put two screws in each board.

Screw two additional short battens on top of these main battens where the legs will be bolted to the top. I found that when drilling for the top bolts to hold the table to the legs, the additional small batten was easier to drill using a spade bit and an electrical drill. There was more room to keep the holes horizontal. Next screw two 75x32mm battens to the outer edge of the circle top, parallel to the middle ones, so that they are just covered by the ends of the outer circular pieces. As before, use two screws per board.

8 At this stage have another further 'dry run', connecting both main beams together and placing the large cross on a level surface. There will be no need to screw them together – the half lap joint will hold by its sheer weight. Lower the table top onto the legs with the main centre battens dropped over two of the legs.

Cut another four short pieces of 50x32mm batten and drill two screw holes in each. Cramp these in position either side of the two remaining legs and screw to the table. Then drill a 10mm hole through each sandwich of leg and battens and bolt into position. Again, there is no need to put the nuts on the bolts at this stage.

9 I then once again removed the table top, placed it to one side and also removed two legs from one main beam. I replaced the ply square in the centre. Now cramp together three pieces of 150x32mm with two of the 30mm wide battens between them (as for the top) for each seat. Remove one of the 50x32mm underseat battens and screw it into the underside centre of the seat. Remove the cramp and drop the lot back in between the main beam slot.

Using either the string or the thin batten with the panel pin from the centre of the ply square, mark an inner and outer circle on the three boards to give the shape of the seat. Mark the ends of the centre and inner board as on the drawing, then remove the centre batten and cut the shapes on the bandsaw. Use these boards as a pattern to mark out the other nine and set aside. Round off the upper edges and ends with the router and rescrew the centre batten.

Try the seat in position and see how it looks. I took the precaution of rounding off the sharp corners, especially on the inner board. It is not very nice to keep catching your shins on these corners.

10 Turn each seat upside down on the bench and screw two further battens on the ends as shown to join them, then cut two pieces of 75x32mm some 450mm in length for the two legs. These should be cut at 70° and fixed to these end seat battens with screws positioned so that they slope outwards, but in a position so that the bottoms do not protrude beyond the perimeter of the outer part of the seat.

Finally cut two short brace pieces of 75x32mm at 45° and screw in position. Cut, clean up and round off the remaining nine seat boards and assemble.

11 Although I made my table from cedar with a furniture oiled finish, it can also be made from planed softwood and stained with a protective exterior wood preserver such as Rustins or Cuprinol. Pressure treated decking timber with a finished size of 150x32mm was a cheaper option, but the grooved finish on one side might not be to everyone's taste.

The main thing with softwood is to have the final resting place on a solid surface, like a patio where water can run off quickly. Grass surfaces lead to early leg rot.

With this in mind, plus the total weight of the tables, final construction should be in situ, with the two main cross beams put together and screwed with the two 100mm x No 10 screws from the underside, bolt on the four legs and lower the table top onto the four legs and bolt through.

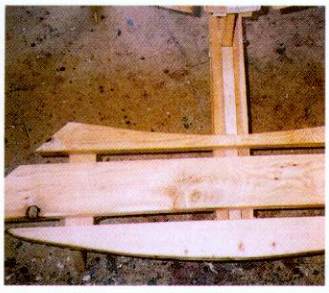
Finally, drop each of the four seats into its slot and bolt to the beams. A sunshade pole will drop down into the centre of the cross, should the sun shine enough to require one!

NEXT MONTH

Treat yourself to the ultimate workbench with Ian Dalziel's heavy duty model with end vice

Constructing the tabletop

09 Aat this stage carry out a dry run to ensure that each component fits together as it should



10 The seats consist of three pieces of 150x32mm, with two underseat battens and a main central support beam

11 Use the sections from the first seat as a pattern for the other three. Dry run with each seat in position

12 Further bracing and strengthening battens are added to the seats before the final assembly

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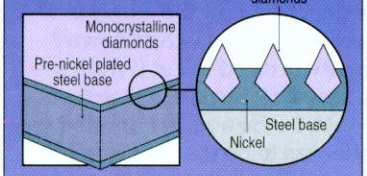

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Royal gateway

Give your garden a touch of royal style with this classical gate inspired by the gardens of Highgrove House. **Bryan Blow** is your guide to the techniques needed

A neighbour and friend of mine recently acquired a extra piece of ground alongside his garden. He cut a gap in the hedge for access and asked me if I would make him a gate to fill the gap. This gate would be no ordinary design however; his wife, who is a very keen gardener, had seen a picture of one of the garden gates in Prince Charles' garden at Highgrove House and wanted to know if I could make one similar in style.

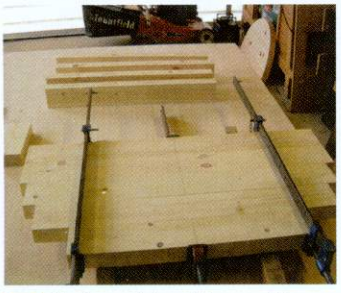
Having looked at the picture I thought it would present several problems, although none that were insurmountable. The main one was how to create the top arch. At first I thought of laminating the curve, but soon dismissed this. Technically the best method would be to make the shape up from a series of jointed segments, but in the interests of keeping time and costs down I finally decided to cut it from a series of blocks glued together.

As for materials, I decided the gate was to be made in softwood, making it a cheaper option than perhaps oak. Of course, such a choice should be accompanied with the generous use of a good quality outdoor preservative to help protect the gate against the ravages of living outside.

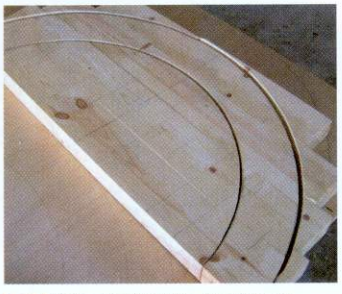
Making the Gate

1 The first thing you'll need to do is draw the gate full size on a sheet of ply, using a trammel for drawing the top and centre rails. If you don't have a sheet big enough, just do the sections that involve round work. The most difficult part of the making

Making the main gate carcase

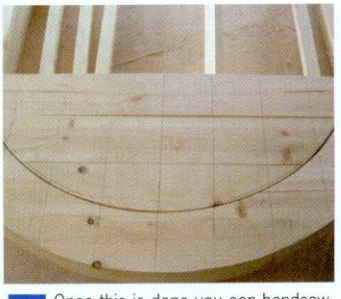


01 The top arch is cut from a wide panel made of various lengths glued and biscuited together



02 Make sure that the biscuits are placed in the area that will form the final arched rail

03 Lay out all the slats on the bottom of the block and transfer to the top face before cutting out the arch



04 Once this is done you can bandsaw both sides of the arch and smooth with drum sanders or spokeshaves

will be the top rail, as this is a full half circle.

Set out a series of 100x50mm pieces to cover the semi-circular shape as drawn, then mark out the positions for the biscuits used to joint these sections within the arch. Cut the biscuit slots, then glue up as a solid block, checking for flat before setting aside.

When completely dry, mark off the circular shape properly with a trammel bar. The pivot centre for this lies right on the bottom edge of the block so cramp a small block on here temporarily to enable you to strike the arch from the right place. Mark the inner and outer lines of the arch, ensuring they're 95mm apart to match your PAR timber for the stiles.

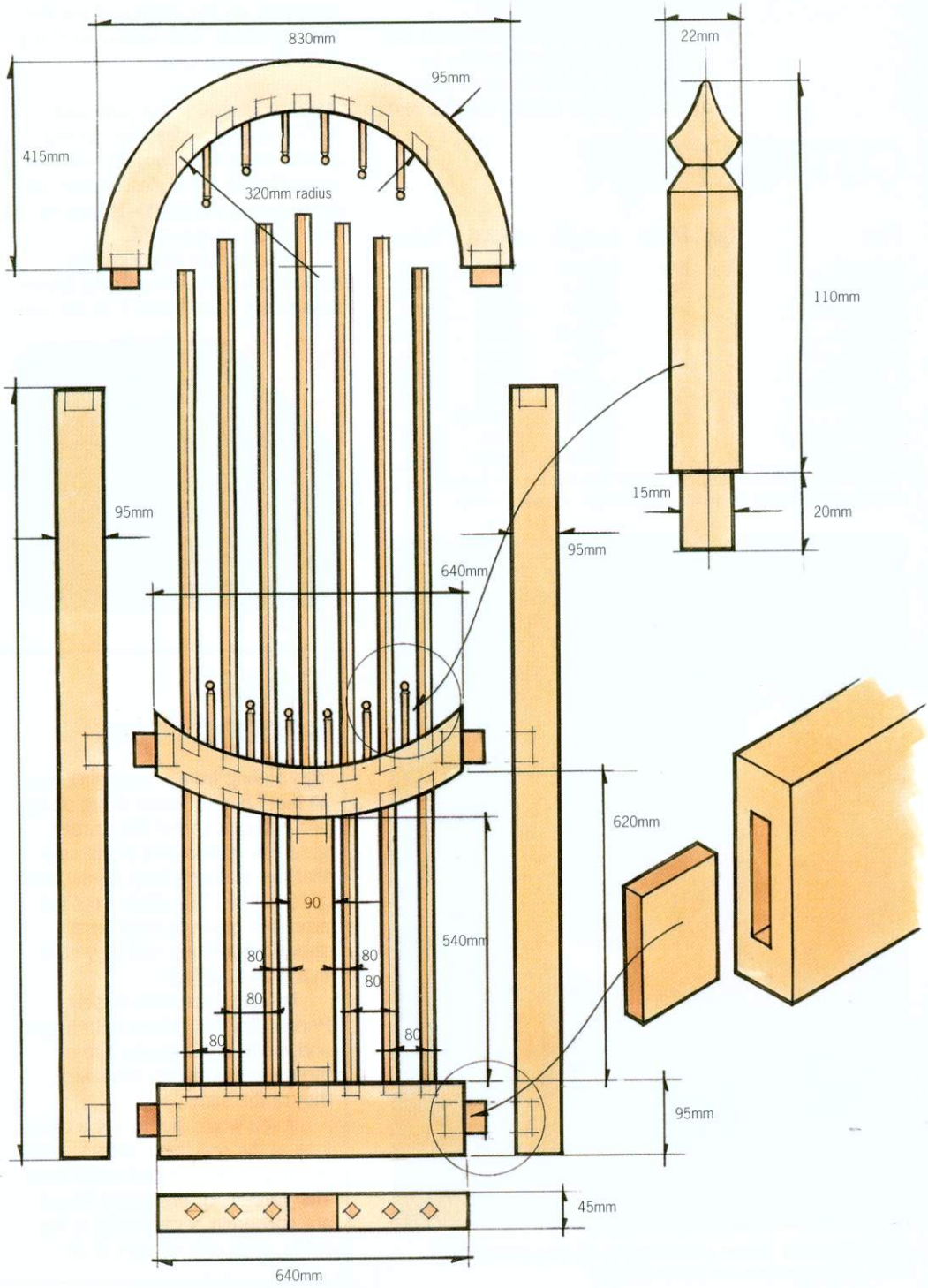
Cut the outer edge of the arch on the bandsaw but don't cut the inner edge until you've set out the positions for the slats and pegs. Measure along the bottom square edge of the block for each of these then square the lines across the face onto the face of the arch itself. Once you've done this you can then make the inner arch cut.

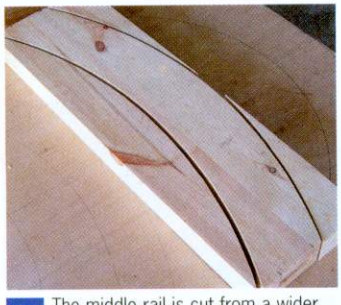
Finish to the lines with a spoke shave, then square the slat and peg lines back onto the cut inner edge of the arch.

The centre rail is made up from several sections in the same way, while the bottom rail is straight and measures 150x50mm. Lay each of these in place against the full sized drawing and each other to ensure that all the slat lines will meet up.

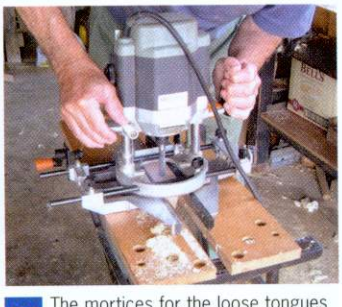
2 The entire gate is jointed up with loose tenons routed into the various timbers. Start with the joint between the arched top rail and the stiles. Cut slots in the bottom ends of the arch and the tops of the stiles with a router. I made these 70x12.5mm by 35mm deep in both to allow for 70mm tenons of 12.5mm ply. Make sure

DETAILS: Garden gate sections





05 The middle rail is cut from a wider block too. Again, mark out for the slats and central muntin before cutting



06 The mortices for the loose tongues are routed. A spiral cutter with an up-cut is the most useful for this depth

07 A pair of fences will centre your router on the timber as you rout with no fear of it drifting

08 You'll need to cramp extra support for the router base onto the timbers as you rout the ends of these

you work off the same face in all cases. Check that the loose tenons do not bottom out and keep the joint shoulders apart.

Check the dimensions from the assembled top rail and stiles to ensure they match those of your drawing before setting out the rest of the gate. Cut the tenon slots on the end grain of the middle and bottom rails then set out these rail positions on the stiles and cut the mating tenon slots (again working from the same face).

3 Dry assemble the gate and cramp up, using the curved off-cut with the cramp to pull the top rail onto the styles. Ensure all of the joints are tight – if they're not, adjust as required.

You can now mark off the middle muntin between the lower rails direct from these. Cut the top joint to shape then rout the loose tenon slots to hold it in place

4 Select straight knot-free timber for the vertical 25mm square slats. These are set at 45° to the gate section and are simply morticed straight into the rails with no tenon shoulders. Take care where the slat enters the curved rails to keep the mortice hole square and parallel with the stiles, especially on the outer slats. If you have a dedicated morticer then you can simply reset the chisel to a 45° angle, otherwise drill out the main part of the hole with a pillar drill, then square off with a chisel.

5 Between the main slats are a series of turned pegs. Drill 15mm holes into the top rail to receive the two pairs of outer pegs, and 22mm holes for the two central ones. The remainder all had 22mm holes drilled to receive the full diameter of the pins.

CUTTING LIST

Part	Qty	Mats	Length	Width	Thkns
A Top rail	1	Pine	850mm	430mm	45mm
B Middle rail	1	Pine	640mm	185mm	45mm
C Bottom rail	1	Pine	640mm	95mm	45mm
D Stiles	2	Pine	1595mm	95mm	45mm
E Muntin	1	Pine	540mm	95mm	45mm
F Top slats	7	Pine	1100mm	25mm	25mm
G Bottom slats	6	Pine	700mm	25mm	25mm
H Pegs	12	Pine	130mm	22mm dia	
I Frame top (total)	1	Pine	2.5m	95mm	45mm
J Frame sides	2	Pine	c2000mm	95mm	45mm

Cutting lists give the full length of a piece including the joint but not wastage. Add 5mm in the width and thickness for sawn material.

This decoratively arched gate will make an attractive entrance into a garden or from one plot to another

TIP When dealing with any project that has round shapes in it, always make a full sized drawing to take measurements from by direct transfer, Also, try to mark up timbers while they are in the square and have straight square edges to work from, before cutting the shapes.

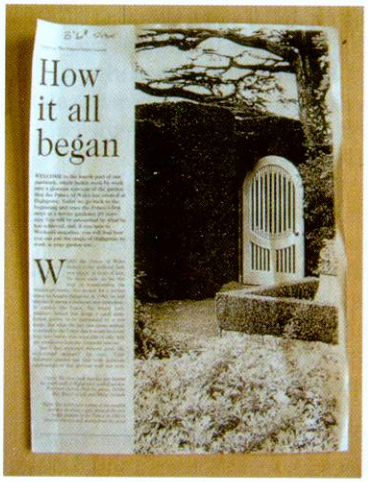
Royal connections

This cutting from a magazine was all that I had to follow in the design and construction of this garden gate. My friends saw it and said that this was how they wanted their gate to look. So I drew it out full-size on a piece of hardboard, showed it to them and they said that it was perfect.

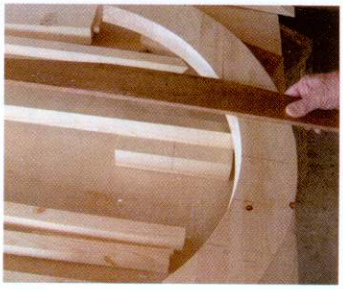
In fact, if you look closely, Prince Charles' gate is both bigger and wider, and features two or three extra uprights. Otherwise, they're the same.

If you would like to get a closer look at the real thing, unfortunately you might have to wait some time. The gardens of Highgrove House are only open occasionally to the public, then only as part of an organised group and there's a waiting list of up to five years.

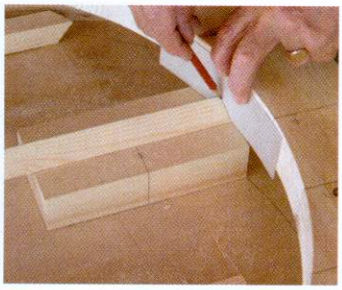
Anyone interested in a visit must apply in writing to The Prince of Wales Office, St James' Palace, London SW1A 1AA.



Add the decorative slats and pegs

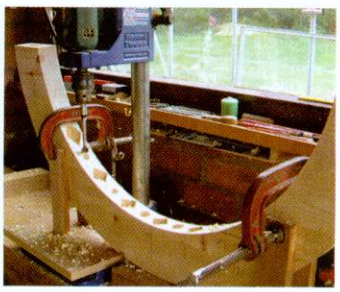


09 Dry-assemble the gate to ensure that all slat markings are parallel and line up before you start morticing for these



10 I made up a 45° jig to hold a slat at this angle against the rails while marking the diamond shape off

11 Use a morticer to cut the slat holes at this angle, or a Forstner bit in a pillar drill, squaring up with a chisel



12 Do the same to drill out for the pegs. You'll need to ensure that the top rail is perfectly aligned under the drill

Laminate try

My first attempt with the top curved rail was to make a laminated section, using a former and several laths cut to a 50mm width. I started with a 5mm thick design, but having tried to bend this thickness and finding it was impossible, I moved on to 4mm and then 3mm. This did the job, but a finished width of rail 100mm would have required 33 pieces at 1.2m long. To glue and bend all these would not have been possible single handed, so I changed to plan 'B' used here.

Drilling is quite difficult at the extreme edges due to the drill contacting the timber on one edge of the curve of the rail, trying to force it off line. Use a Forstner bit in a pillar drill for the best results.

6 Turn 12 round pegs to shape at 125x22mm. Most of these are left as this but the four outer pegs for the top rail require spigots turned onto the top end to reduce them to 15x20mm.

Insert the outer pins in the outer drilled holes and then scribe the main body to the rail shape. Trim this with a chisel to suit

7 Assemble the gate with a waterproof glue such as a polyurethane, then check for twist and that the bottom rail is square to styles. Don't forget to add the slats as you go. The pins are glued into the holes after the glue has set and the cramps removed. All joints are cleaned up and rails and stiles sanded to finish.

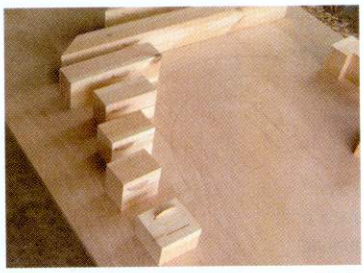
NEXT MONTH

Ian Dalziel shows you how to build your own ultimate cabinetmaker's workbench with end vice

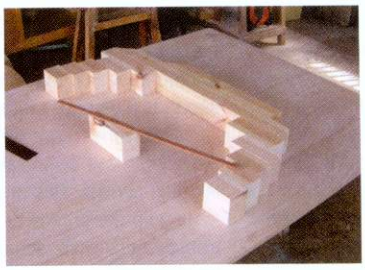
Making the frame

The frame to support the gate is made up of 100x75mm PAR. The top rail is constructed in the same way as the top rail in the gate, using 100x75mm PAR. Rather than waste a lot of large section timber I assembled a series of small blocks together on the drawing, then used a trammel on this to check that an arch could be swung, before biscuit jointing together as horizontal straight segments. This is then cut to shape and morticed and loose tenoned as before to join to the side frame posts.

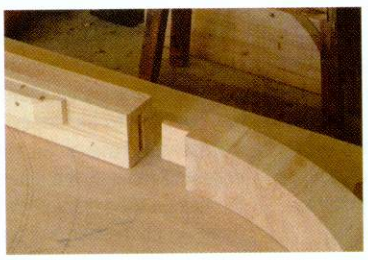
The upright frame posts were reduced to 75mm square at the bottom to receive Metpost units.



01 The blank for the top rail is assembled from a series of smaller blocks to save timber. These are again biscuited



02 Use a trammel arm pivoting on a block to sweep across the blocks and check that they are all sufficient to form the arch



03 Loose tongues are again used to joint the frame. Note that these are at 90° to those in the gate frame

04 Blocks of timber cramped to the top arch act as locators for the sash cramps to pull the frame together

Planting in the ground

The gate and frame require sanding, priming and finishing with paint suitable of protecting such a piece in its outdoor position. The timber should also be given a good soaking with a preservative prior to painting. The main frame was set in the ground in steel Metposts set in concrete. Take care at this stage to keep the stiles perfectly parallel – a batten across the bottom of the frame will do this.

100mm brass butt hinges were used to hinge the gate in its frame, and a steel black japanned latch to hold the gate shut.

You can buy Metposts at garden centres or DIY stores

MATERIALS YOU'LL NEED

Timber

Bryan used PAR pine. This is fine when well preserved and painted. Hardwoods such as oak will last longer but will prove quite expensive

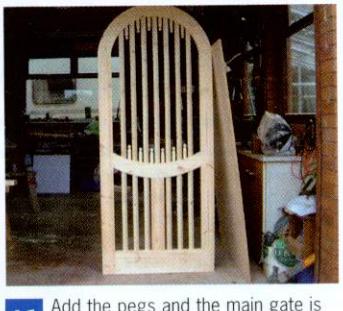
PROJECT GUIDE

Difficulty
Intermediate
Time
40 hours
Type
Garden Joinery

13 Turn a series of pegs between centres. The outer top ones have spigots turned, the centre one none

14 Push the outer pegs into their holes and scribe and trim the shoulders to match the curve of the gate rail

15 Now you can clean up and assemble the main carcase. The offcut from the top rail could be used as a cramp aid



16 Add the pegs and the main gate is finished, save for cleaning up and treating with preservative

Letters

Something to get off your chest about the world of woodworking? Write to us at Good Woodworking Letters, 30 Monmouth Street, Bath BA1 2BW

A Saw Point

In your recent Group Test in GW 147 you state that hard point saws cannot be resharpened. This is not true, as the teeth on hardpoint saws are not that much harder than those on a traditional saw. After all, we sharpen tungsten tipped tools don't we, and TCT is harder than hardpoint saw teeth. So don't throw your £10 hardpoint saw in the bin, resharpen it. It can be done.

I. Sloan, West Bromwich

Printer tales 1

In 'Old Wives Tales' in GW 148, Jeff Gorman suggests that ironing laser printer images onto wood does not work. Well, no... I would not expect it to because of the way that the image is bonded (fused) to the paper. The same is true of the output from a photocopier which is produced in the same way.

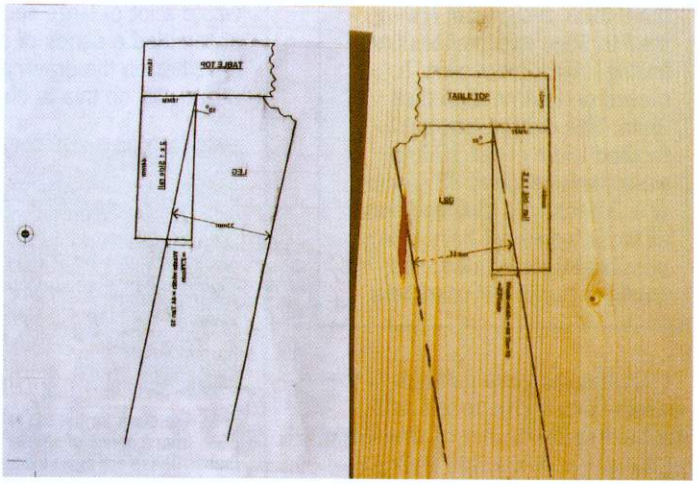
But it is useful to be able to transfer a cutting-out pattern onto wood, and it can be done with the output from any inkjet or bubblejet printer. The inks used in these are water based and with a newly produced print it is only necessary to dampen (not wet!) the surface of the wood and then press the newly printed paper on to it for a few seconds (see photo right).

This works more effectively if the printer lays down rather more ink than normal. This is done by setting up the printer to produce a transparency while actually printing on plain paper.

A. Jacques, Manchester

Printer tales 2

I read with interest Jeff Gorman's Old Wives' Tales about using a laser printer to print on wood. He gets a few things wrong in his text. Firstly, he mentions laser printers and then inks. Laser printers use a powder toner not ink. Secondly the process does work if you do it properly.



To make it work you need to laser print onto the waxy backing paper that comes on sheets of labels, not onto the paper labels themselves. I use an A4 sheet, removing most of the labels. Print the design then place it toner face down on the timber and go over the back of the design with a warm iron. Let the paper cool and then remove it from the timber, leaving the design in place.

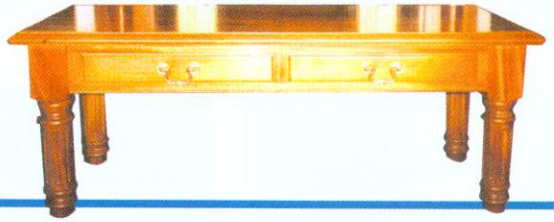
The design needs to be covered with a clear spray lacquer to protect it, but it does work.

Mike Swain, via email

Readers Gallery Brian Shaw, Co Londonderry

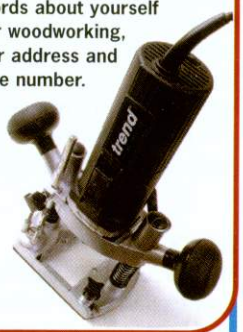
I have been making pieces of furniture for around five years now, though I have always been interested in, and will tackle, most aspects of DIY. I am mostly self-taught, gaining experience from just getting on with what needs to be made.

The breakfast display cabinet in the photo was made for a member of my wife's family. A coffee table followed and now a corner cabinet has been mentioned to add to the 'suite'. I would like to think that the breakfront cabinet would still be around in a few hundred years time, I don't think I will make anything quite like it again!



WIN a **TREND** router

Each reader whose work we feature here will receive a Trend T3 router. Send us some sharply-focussed, 6x4in colour prints and a few words about yourself and your woodworking, plus your address and telephone number.



We would like to hear what you have to say about woodworking, good or bad. Please send your contributions to:
Good Woodworking Letters
30 Monmouth Street,
Bath BA1 2BW
Emails to:
goodwood@futurenet.co.uk

Patronising mags

I write in response to the letter from Bill Irvine (aka Stumpy) in GW 147 but also to the voluminous numbers of letters on the subject of safety and TV.

Can contributors such as Bill be any more patronising than when they assume that viewers of the woodworking programs he cites have a mentality of 'Monkey-see, monkey-do'? Can woodworking magazines be any more patronising when they talk about these tools being far too dangerous for the likes of us, the great unwashed?

Bill lays into David Free (Great British Woodshop on Home and Leisure channel) essentially for using a dado head and wonders why the HSE don't stop it. The reason is that they can't because it is not illegal to use a dado head cutter. Should you choose to use one on a machine that can accept one, then that's fine. If the worst does happen and you have an accident, you have nobody to blame but yourselves. David Free knows this and accepts it, as does everyone who uses any kind of woodworking tool.

Woodworking magazines seem accomplices in propagating the myth that dado's are illegal, when in fact they are not. And now they are beginning to be caught in this lie with machines now being available with this facility (Felder anyone?).

I am just asking that we keep an eye on safety, but please let's stop being patronising. If there are people who will copy what they see on television and who do not take safety seriously and then hurt themselves, well – that's their fault. End of story.

Andy Cooper, Chelmsford

It appears this subject is designed to run and run and run... See our Answers section (page 61) for some more but, in the meantime, it's worth pointing out that the tooling developed by Felder does indeed allow dados to be made legally on a table saw, being basically limited cutter projection tooling (LCPT) similar to that used on a spindle moulder. However, before anyone gets too excited, these are designed to be used on Felder machines and are not apparently retro-fittable, so you'll need to splash out a fair dollop of cash for the priviledge of doing what a router will do for a tenth of the price. *PM*

Letter of the Month

In association with trend routing technology

WIN a TREND router

Allowing for the waist

The subject of trousers is not something that I have seen aired on your Letters page before. Readers' letters are understandably focused on the ways of wood and the woodworkers who manipulate it.

For me however trousers have become as important as sharp tools and a well ordered workshop. Trousers had always been just something I wore. They followed me about as I worked – walking, bending or stooping. All without problems. However, (mysteriously) by the time I reached my fifties my trousers only allowed me to stand. All other movements required during a woodworking session were slow, uncomfortable and severely restricted.

I worked out that the root cause of the problem was that my body shape was changing from being like a pencil to being like a plum-bob. The combination of vanity and the belief that 'things would be better' if I cut down on the treacle pudding prevented me from doing the obvious and buying a pair of trousers with a larger waist.

As a result of my inaction, relief and restoration to a full set of movements did not come until I discovered trousers with elasticated waistbands. Once again I could stoop down to eye up a cut, or bend down easily and comfortably to pick up a dropped screw.

I have to admit that the euphoria brought about by elasticated waistbands only lasted about a year. Then my problem, 'tight tummy syndrome', returned to haunt me. I began to think that perhaps I should just do standing up jobs and leave the fixing and skirting boards to someone else.

But relief was once again achieved, this time by dispensing with my trousers altogether. I do not mean that I work naked, although the thought has crossed my mind, but I took to wearing a boiler suit. Nice and baggy round the bum and the tum. It was great.

But... Yes, another year on and even the Telly Tubby suit is getting a bit tight in certain places! Perhaps I should start up a naturist woodworkers group!

Nick Martin, Leiceste

The Letter of the Month wins its author a Trend T3 variable-speed router, plus a box of cutters. For details of Trend tools and stockists ☎ 0800 487363 *www.trendmachinery.co.uk*

Oooops!

I have read your magazine for many months now, and the content of GW 148 was excellent. But I must admit I was rather confused when I read the page advertising the next edition. It was obviously the page from the previous edition as it was advertising articles included in this edition. I am sure you have had more comunications regarding this matter than mine but I felt I had to let you know.

Jim Walker, via email

Seems like we had a slight mishap at the printers Jim but rest assured that pages 96/97 of this issue do reflect the content of next month's great issue – our 150th! *PM*

Battery power

In GW 148 Jim Reynolds enquired about replacement batteries for a Racal Airstream. I have a Purelite Airsheild helmet - the predecessor to the Trend Airshield. I am not sure what the Racal Airstream battery pack looks like, but when I fancied having an additional battery pack I made one myself.

I gently separated the plastic packaging so I could find out how it was put together and what parts were required. I then went to Maplin and got the necessary parts: a quantity of matching battery types, a matching connector and some wire to connect them all together in the right way. I already had a soldering iron.

The other main item required was some thin plastic sheeting that would bend around one of the batteries without the plastic splitting. The plastic sheeting is used to hold the batteries together and copy the shape of the existing battery pack - a bit of blue peter craft work. In addition some sticky tape to tape to original battery pack back together securely in addition to securely taping together all the parts of the plastic sheeting around the new battery pack.

This rough and ready presentation may give Jim as well as others an idea when they can no longer get battery packs, although I would limit doing this to low voltage packs for safety reasons.

George Wilson, Aberdeenshire

Old Wives' Tales Considered by Jeff Gorman

While Grinding, Don't Quench

It has been said that the edge is weakened by micro-fissures in the metal caused by repeatedly heating and rapid cooling. However, it appears only to apply to High Speed Steel. For many years it has been general practice to use water when grinding and cooling edged carbon steel woodworking tools, giving satisfactory results.

On Test

After a new power tool? Want to replace your bandsaw? **ANDY KING** gives new products a workout to help you decide

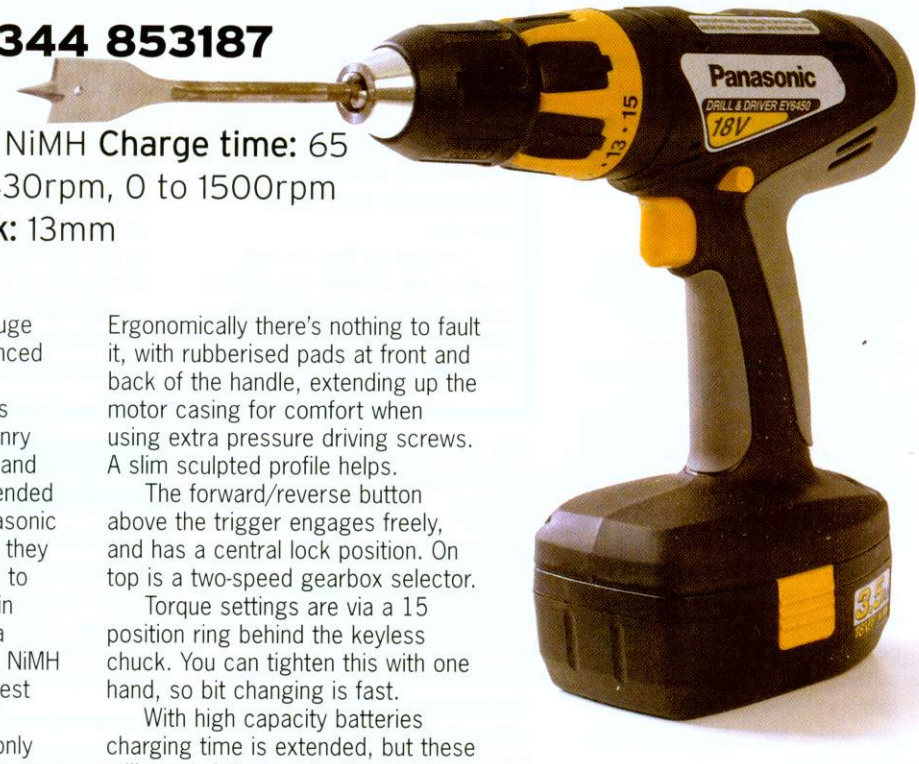
Prices
We show manufacturers' list prices where possible, including VAT. Value for Money ratings are based on these prices. Many items will be cheaper in the stores, so it pays to shop around

Panasonic EY6450 Cordless Drill

£492.33 ☎ **01344 853187**

www.panasonic.com

Battery: 18V 3.5Ah, NiMH **Charge time:** 65 mins **Speeds:** 0 to 430rpm, 0 to 1500rpm
Weight: 2.6kg **Chuck:** 13mm



Cordless drill/drivers with huge voltages have never convinced me that such power is really necessary. On a combi tool this extra power can help for masonry work. But I tend to find drilling and driving jobs too tiring over extended periods with a heavy tool. Panasonic obviously have no concerns as they have now added an 18V model to their range. As a major player in battery technology, they have a distinct advantage. These 18V, NiMH packs are rated at 3.5Ah, biggest capacity on the market.

This Mexican-built drill still only weighs 2.6kg, though. Not quite as compact as their 15.6V version, the EY6450 is still only 250mm long. Its T grip design gives a good balance.

Andy managed to drill almost 300 20mm holes on one battery charge

Ergonomically there's nothing to fault it, with rubberised pads at front and back of the handle, extending up the motor casing for comfort when using extra pressure driving screws. A slim sculpted profile helps.

The forward/reverse button above the trigger engages freely, and has a central lock position. On top is a two-speed gearbox selector.

Torque settings are via a 15 position ring behind the keyless chuck. You can tighten this with one hand, so bit changing is fast.

With high capacity batteries charging time is extended, but these still reach full power in 65 minutes. To be honest, unless you were driving in huge screws without pilot holes or drilling maximum diameter holes (50mm in timber, 13mm in steel) it would be pretty difficult to drain the tool before the next pack was charged up and ready.

To test, I fitted a 20mm flatbit and began drilling in 19mm MDF. Fifteen minutes and 100 holes later, it was a toss up between who was going to run out of steam first! The battery finally died after 294 holes.

Two batteries and a sophisticated diagnostic charger are standard with the Panasonic

Usually a drill gets warm if run constantly, and the Panasonic was no exception. Performance didn't suffer at all, though.

I find a 12V tool is usually quite adequate for extended use. A decent quality one will drill timber to 38mm diameter, enough for most woodworking tasks. This is a great drill, but I'd find it too tiring for every day use. Now if only it was a combi drill, with hammer action...

Street price will be around £330.

GW verdict

⊕ Excellent build. Superb power capacity
⊖ Heavy for general drill/driving work

Value for money ●●●○○
Performance ●●●●○

What the performance ratings mean

●●●●● Superb. Can't be faulted
●●●●○ Excellent performance
●●●○○ Good, but not the best
●●○○○ Scope for improvement
●○○○○ Don't bother

Ryobi EMS-1830S Sliding Mitre Saw

£469.95 ☎ **01491 848700**

www.ryobitools.com

Motor: 1800W **Speed:** 4400rpm
Blade: 305mm **Capacities:** 343x111mm @ 90°, 242x111mm @ 45°

With mitre saws commonplace in both the professional and DIY market, choosing the right one is not easy. Ryobi's new pullover saw has some neat features, though.

Like any saw with a trenching facility, the rods project through the back of the machine. So overall size is daunting, especially if you have to move it from job to job. Despite this, the Ryobi has the longest travel of any 12in pullover saw. It will cut stock up to 111mm deep and 343mm wide at 90°. Impressive, having a crosscut at least 25mm wider than its competitors.

The head travels on twin rods. Normally set either vertical or horizontal, these are diagonal. This, I assume, is a compromise to limit play in both sideways and vertical movement. It seems to work pretty well. I initially thought play was sloppy, but there are four adjuster screws on the casing over one of the rods to keep travel smooth, while eliminating play. Trenching on a mitre saw can be hit or miss. Flexing in the head means results are not always consistent, and even with diagonal rods, this is still the case here. Too much hand pressure will make the cut too deep. Like all saws of this type, packing the workpiece away from the fence is also needed to get a full, uniform cut.

Ryobi's inclusion of an indexed stop for set depths is neat. It uses a protractor-like disc with index markings rotating against a stop. This is offset so as it rotates the outer rim limits the plunge of the saw head. Accuracy was a bit hit or miss, and a clearer scale would be an improvement. Better still, index notches would be useful, as the disc can rotate slightly under excessive pressure.

A hole in the disc locks the head down for storage. Setting angles on the Ryobi is simple. Compound bevels are locked with a large paddle handle so you don't have to get round the back to adjust. A major benefit is the double compound head action, tilting to left or right. The motor is mounted horizontally to the left. An indexing pin locks the head at 0°, 22.5°, 33.9° and 45° settings. Bevel cutting capacities on the right side are limited to 41mm at 45° and 63mm on the left.

The fence has two sliding sections that pull back to enable the saw head to tilt, adjusted with locking knobs.

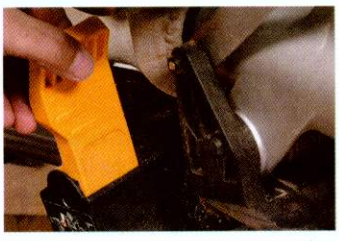
The table has a big paddle lever for angle locking. A central thumb dial releases the index pin and enables the table to travel freely when unlocked. The paddle holds any angle to 60° in both left and right positions. Indented settings of 0°,15°,22.5°,30°,45° and 60° are located with the thumb dial before locking with the paddle.

In use, the saw works extremely well. Although an imposing size, the brush motor drives the head via a belt with a soft start, so there's no jerk when you hit the trigger. The horizontal grip is comfortable, although the safety lever for the lower guard seems a bit flimsy.

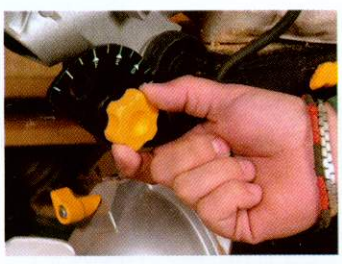
Cuts from the 60 tooth TCT blade were very clean, leaving a silky smooth finish on the ends of 150x50mm sapele. I found after a few cuts the blade seemed to slip slightly due to belt tension. Shipping from halfway around the world probably caused this, but luckily there was no need for the machine to be returned. Removing the belt casing reveals adjustment screws for re-tensioning. Other adjustments for tweaking mitre accuracy are as simple to reset if necessary.

While quality of castings and alloy components is excellent, I'd like to see some adjustments upgraded. Paddle levers are plastic, so I'm not sure how they'd fare over time. Alloy or similar would be more robust. Likewise, the safety lever could be better. But for a dual compound machine with such impressive capacities, at this price there has to be some give and take. If you need capacity and adaptability, and have either the workshop space or the muscle to transport it to site, this Ryobi saw is superb value.

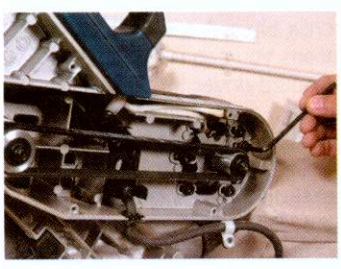
The front paddle lever enables you to use a thumbwheel for indexed angles



The compound angle locking lever faces forward, so access is good



A protractor scale means you can quickly set blade depth for trenching



Adjusting belt tension is easy. You remove the casing and use a hex key

GW verdict

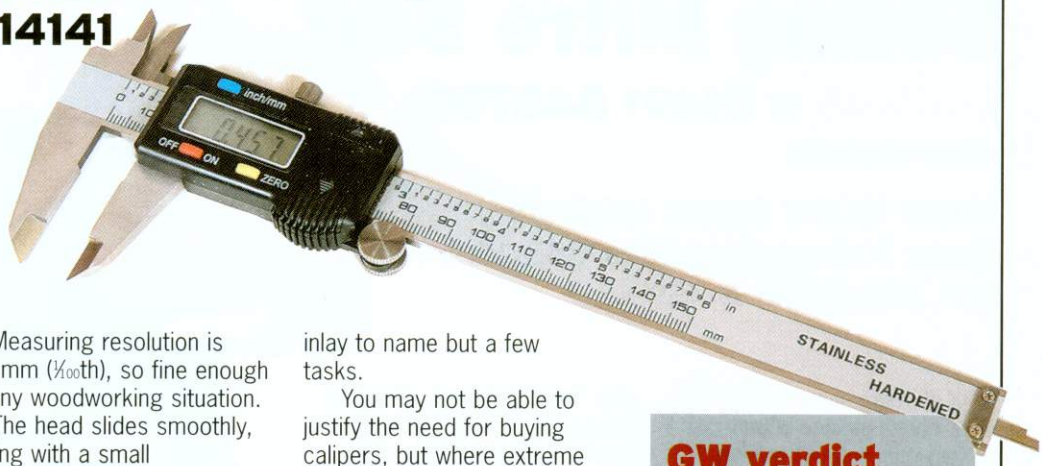
- ✚ Double compound, good capacities
- ✖ Plastic adjuster levers

Value for money ●●●●◐
Performance ●●●●○

Screwfix Digital Calipers

£39.99 ☎ 0500 414141

www.screwfix.com



Engineering work demands a good pair of calipers, but for woodworking they are just as useful. Even once you understand how to read standard types, it can be easy to make a mistake. You need pretty good eyesight! Digital calipers make all the difference as the dimension is indicated clearly on an LCD screen. This CE-approved pair from Screwfix Direct are stainless steel with a capacity from 0 to 155mm.

Four measuring options are built in: standard inside and outside diameter jaws, stepped measuring for distances from a surface and a depth measuring blade for internal dimensions.

The digital readout has three buttons. One converts from metric to Imperial, on/off and a recalibrating zero option. Although an Imperial option is good, it still converts to a 10th scale to allow a digital interpretation. So ⅜in becomes 0.75, for example.

Measuring resolution is 0.01mm (1/100th), so fine enough for any woodworking situation.

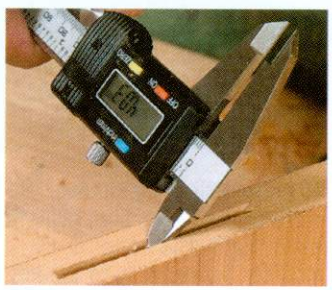
The head slides smoothly, locking with a small thumbscrew to check a dimension. Ideal for woodturning, calipers are handy for checking tenons against mortices, offsets for shoulders, drill diameters and inlay to name but a few tasks.

You may not be able to justify the need for buying calipers, but where extreme accuracy is important, a good set of measuring tools are essential. These come in a foam lined protective plastic case with a spare battery.

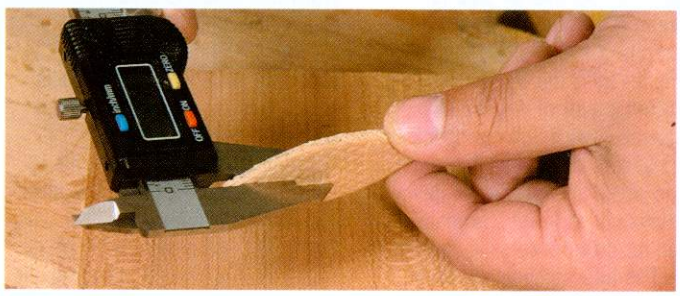
GW verdict

- ⊕ Precise, easy to read
- ⊖ Imperial scale can be confusing

Value for money ●●●●○
Performance ●●●●◐



A handy tool for accurately measuring slot widths and mortices



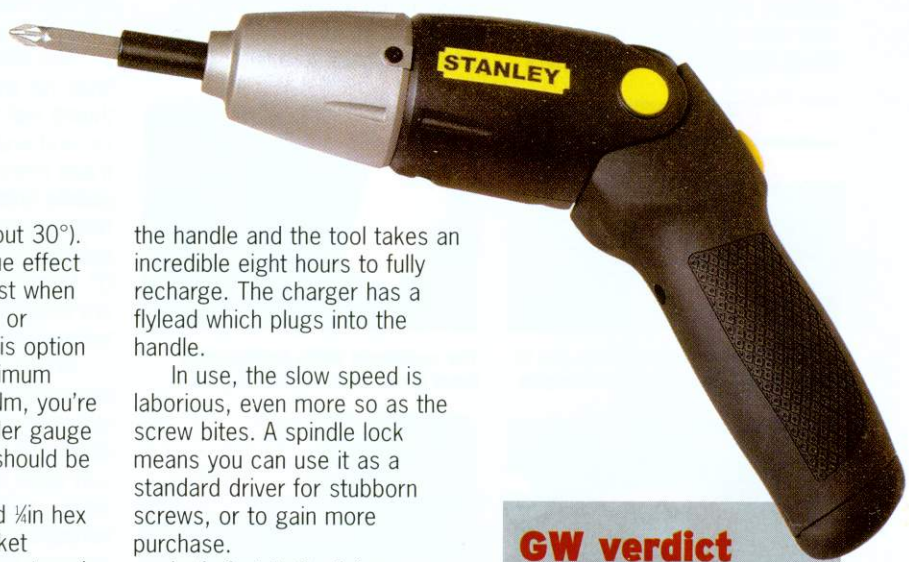
You'll find biscuits are not always a consistent thickness... A digital readout is far easier to read than a tradtional scale

Stanley 60-036 Cordless Driver

£24.99 ☎ 0114 276 8888

www.stanleyworks.com

Battery: 3.6V **Speed:** 150rpm
Torque: 3.4Nm **Charge time:** 8 hours



With the flood of imported DIY -rated battery drills at silly prices, it seems strange the cordless screwdriver still survives, especially as it has just one function. Stanley obviously believe there's a market, and while the new 63-036 screwdriver doesn't break new ground, it's one of the better ones in terms of comfort. It has a sculpted, rubberised grip with forward/reverse rocker switch mounted on top, easy to reach with your thumb.

The handle is jointed for either inline driving, or for using in cranked format (about 30°). This reduces the torque effect generated on your wrist when driving bigger screws, or removing old ones. This option is fine, but with a maximum torque loading of 3.4Nm, you're limited to driving smaller gauge screws. Ideally these should be pilot-holed first.

It accepts standard ¼in hex bits, but the deep socket means the longer 50mm type is needed, unless you fit an auxiliary holder. Overall length is 290mm (without bit fitted) so longer than most battery drills.

The battery pack is built into the handle and the tool takes an incredible eight hours to fully recharge. The charger has a flylead which plugs into the handle.

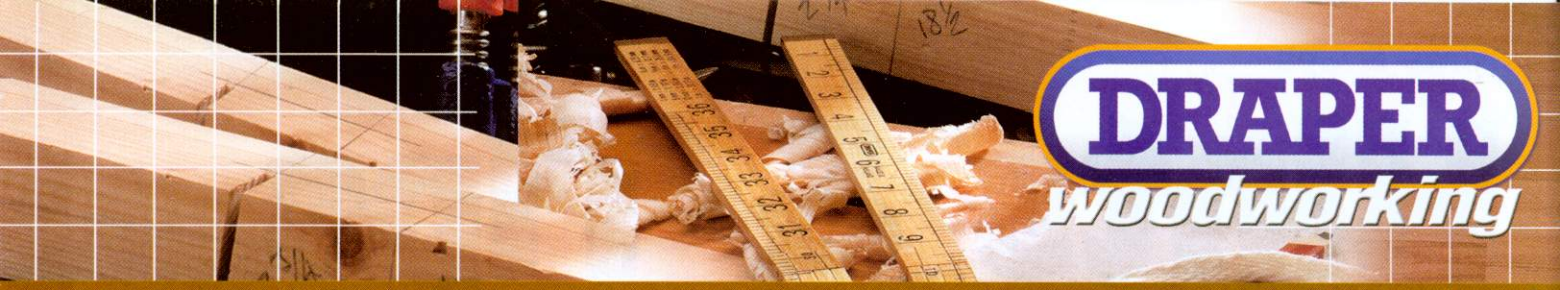
In use, the slow speed is laborious, even more so as the screw bites. A spindle lock means you can use it as a standard driver for stubborn screws, or to gain more purchase.

Let's fact it, the inline cordless driver is old hat these days. It may be handy occasionally in the home, but in the workshop you're better off with a battery drill/driver.

GW verdict

- ⊕ Comfortable hinged handle
- ⊖ Long charge time, slow speed

Value for money ●●◐○○
Performance ●●◐○○



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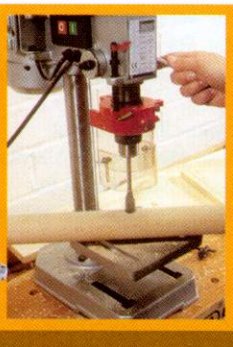

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Stock No. AD66040

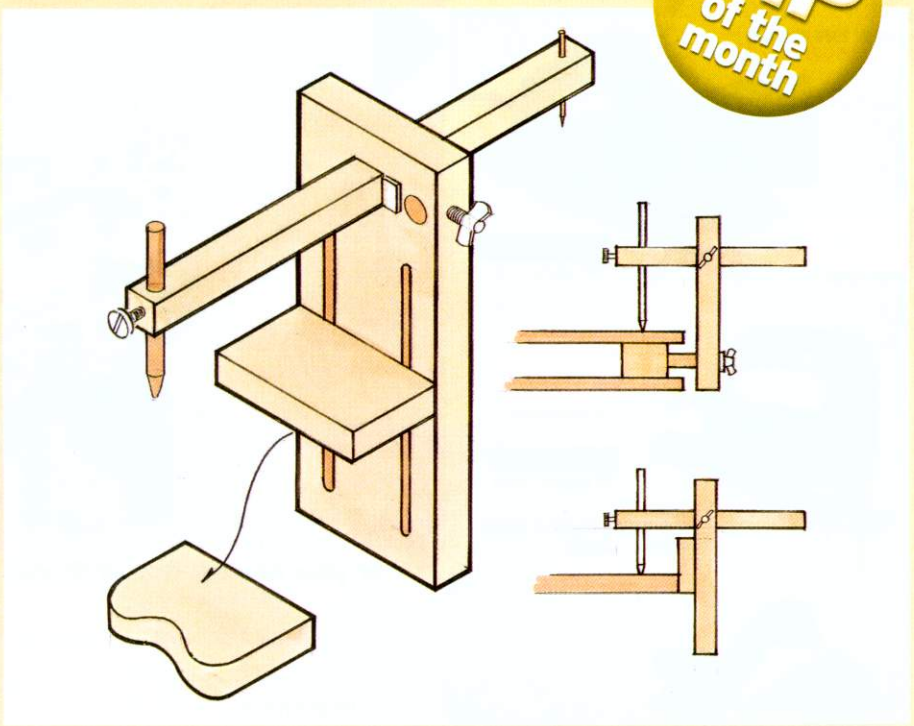
REF: WOOD A

Hints & Tips

Pete Martin rifles through your latest hints and tips to help everyone improve their woodworking. This month includes tips for marking, lettering on drawings, cheaper batteries and various squares

Two marking gauges

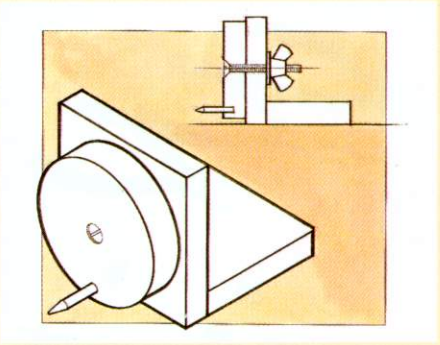
TiP of the month



Here's two small devices one can make for the workshop that will prove useful on many an occasion. The first is a marking guage for use when there is an obstacle to get round. This can be used with or without an adjustable fence as shown

The second is an adjustable levelling scriber, suitable for levelling table legs, and the like, and which can be made from workshop scraps. To adjust the height of this you simply turn the round disc to the height required and tighten the wing nut

J. Dodge, Southampton

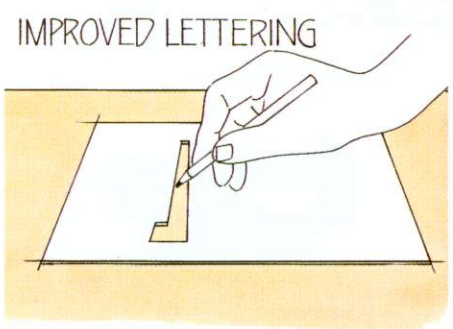


Text aid

Making drawings of one's own projects is very rewarding and annotating them in one's own script gives them a personal touch. A simple way to do this is to cut a narrow slot in a piece of cardboard to guide the pen with a slightly larger slot at the end for capitols.

I have found the best pen to use is a cheap, fine-tipped fibre pen. Various styles can be created within the same slot.

Peter Giolitto, Epsom



Stepfree gluing

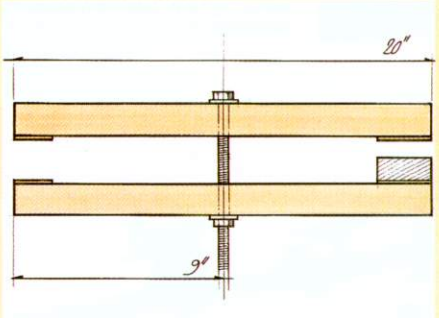
For a current project I had to edge joint 1in ash boards to make up 60in long panels. The required panel thickness hardly allowed any margin for cleaning up after gluing, so stepping between boards had to be avoided.

Methods that I had used previously had always left some slight irregularities so I tried hefty wooden clamps along the board's length. Similar to blocks and 'G' cramps used at the ends.

The results were so good that a couple of the thinnest shavings finished the job. To ensure control, boards were glued up in pairs and a third added later. They were set out on long blocks with the sash cramps jacked up on ply strips.

The centre sash was closed but not tightened and a wooden clamp was positioned either side. With pressure pads astride the joint, they were tightened hard until the boards aligned exactly. The sash was then fully tightened. Working out from the centre, each sash cramp was dealt with the same way, squeezing the bowing. Blocks and G cramps were used at the ends and left in position.

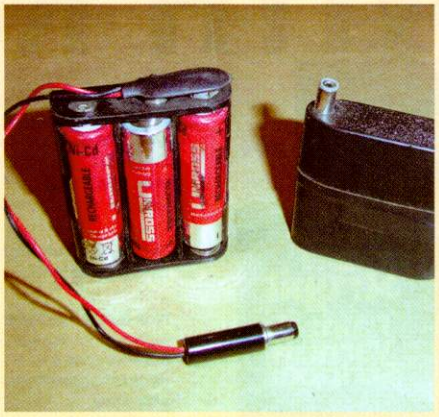
Victor Bell, Lincoln



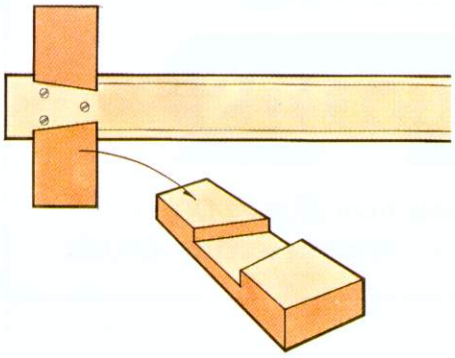
Affordable batteries

Having acquired a Trend Airshield mask, I thought the spare batteries were a bit expensive at over £20 each so I took a trip to my local Maplins electronics store to see if I could produce a cheaper copy. They sell a three-cell battery holder and a set of battery contacts that snap into place with a positive and negative terminal already connected. All that remains to do is fit the relevant jack plug. The total cost to make three sets plus batteries was just over £20. They sell a two hour charger for just over £5 so you should have more than enough power. The positive terminal on the jack plug is the centre terminal.

R. Morgans, Kent



Engineer's square



I now use an engineer's square for marking out as this is less bulky than the traditional carpenter's try square. The blade is about 6in long but occasionally I require a larger square so I have made up this two sided hardwood version. In my square the stock is mahogany and the blade rosewood.

The blade 18x29x¼in has two notches cut to form a dovetail. From this the stock 6x2x1in is marked out and cut with a matching housing. The blade is bevelled both sides and secured with glue and brass screws. The square looks nice if finished with a few coats of French polish.

For small pieces of hardwood for such projects contact suppliers of 'musical instrument' wood as they often have offcuts.

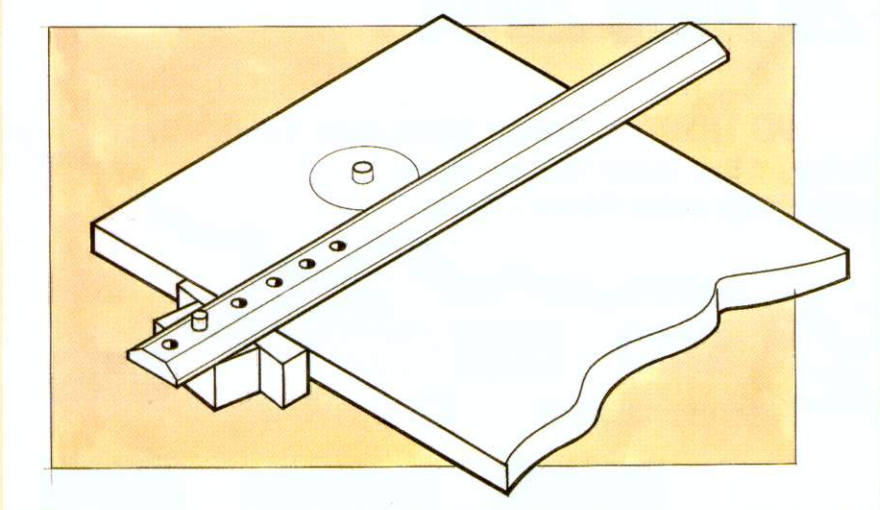
Peter Giolitto, Epsom

Guide strip for router

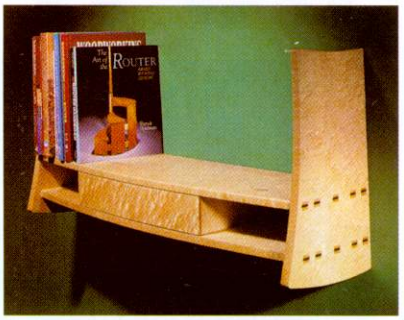
I have been cramping a straight piece of scrap wood on a job as a guide for the router base when cutting long grooves or other surface work. I then decided to improve on this by making the adjustable guide strip shown.

This is a straight grained piece of wood (to reduce risk of warping), extending longer than I expected to need. Mine is 50x25mm section and I worked chamfers along the top edges. A block fixed at one end holds the strip far enough off to ensure the router has a good bearing before it starts to cut. Adjustment is with a block and a 19mm dowel rod that can be pushed into any of a series of holes and be tightened with a wedge.

Erskine Standdish, Wembley



win a LEIGH JIG!



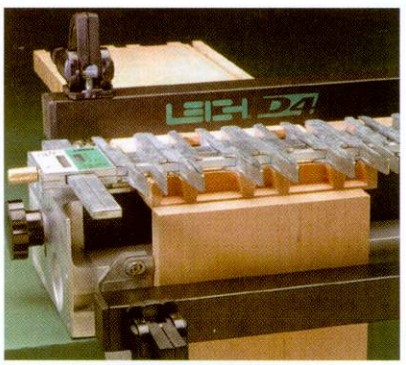
Stop for a moment.
Think a while about your workshop. What clever tips have revolutionised your woodworking, making it easier, safer and more fun?

Perhaps you've picked up hints from other woodworkers or just worked them out yourself. However large or small they are, other readers are bound to benefit from your tips. So send them in to us at *Good Woodworking*, along with simple sketches or photographs if necessary. It's well worth the effort as each month we will award the winner a £35 **BriMarc** voucher, while each of the runners-up will receive a £25 voucher.

The **BriMarc** catalogue, which we'll send to the winner and all the runners-up, is jam-packed with great ideas that have been turned into clever woodworking tools. If you would like a **BriMarc** brochure and details of your nearest stockist just telephone ☎ **0845 330 9100**.s

Send your ideas to Hints and Tips, *Good Woodworking*, 30 Monmouth Street, Bath BA1 2BW . Don't forget to include relevant sketches and photos.

Tip of the year



In addition to Tip of the Month, we will also award a **Tip of the Year** prize to the best idea published in these pages during the year. The winner will receive a complete **Leigh D4 Dovetail Jig** worth £375 from **BriMarc**. This innovative Canadian jig was tested in GW 86 along with nine other dovetail jigs and was highly recommended by editor Phil Davy. It handles material from 3mm to 30mm thick and up to 610mm wide. It's beautifully engineered and simple to adjust.

Workshop Angles

AN OPEN DOOR TO WORKSHOPS AND THEIR OWNERS
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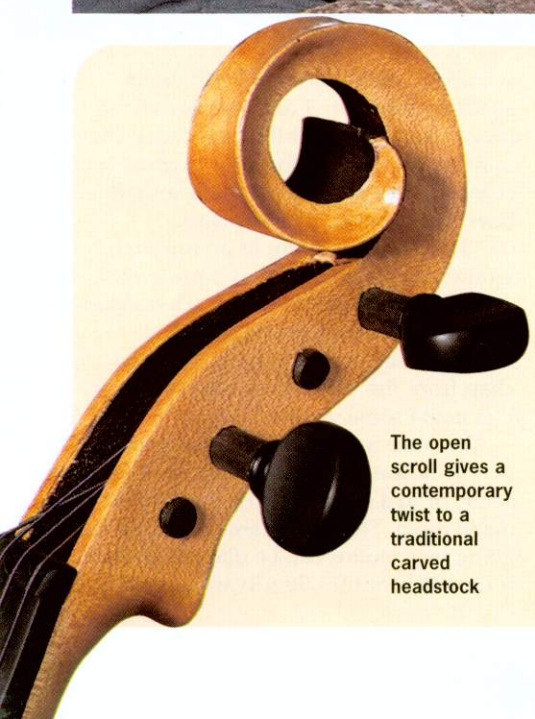


The open scroll gives a contemporary twist to a traditional carved headstock

Most people would consider the violin to be a fiercely traditional musical instrument. Not Tim Phillips though, who makes some of the most unusual violins you're likely to come across. Take a closer look and you'll see a corner missing, or there may be five strings instead of four…

Tim is self-taught and builds about 20 instruments a year from a small workshop in the heart of Wales. This was originally a water-powered grain mill, where local farmers brought their corn to be ground for animal fodder.

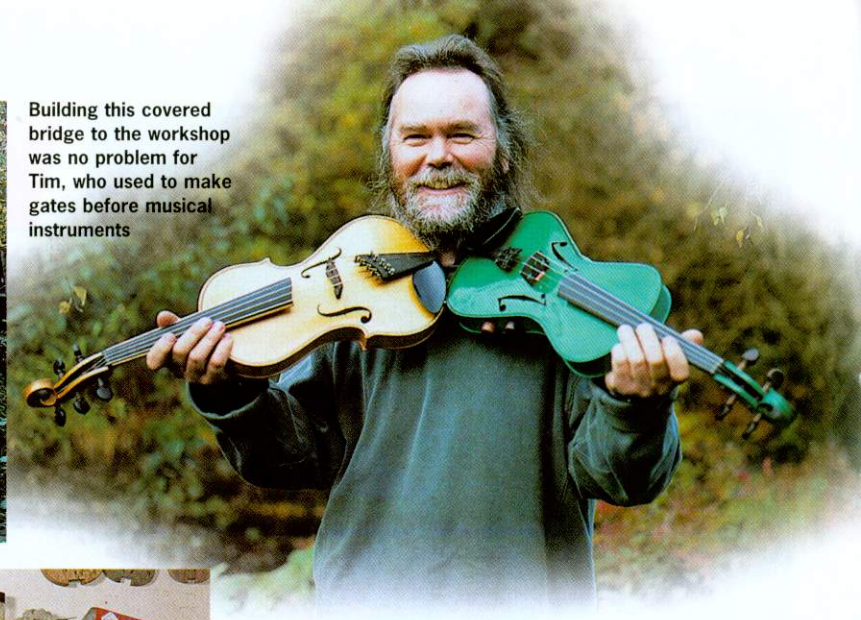
Previously the local village carpenter and gate builder, as well as a folk musician, Tim decided to change course.

"When I told my friends I was going to become a violin maker they all laughed! I spent four years of my spare time building a suitable workshop that was warm and dry. It became known locally as Tim's Folly, it was unoccupied for so long!" Tim laughs.

"Originally my wife bought me a violin kit which had a pre-routed top and bottom, with the ribs ready formed. I got all the bits out on the table and thought there were far too many. It was too complicated, so I dumped the pieces back in the box," Tim recalls.

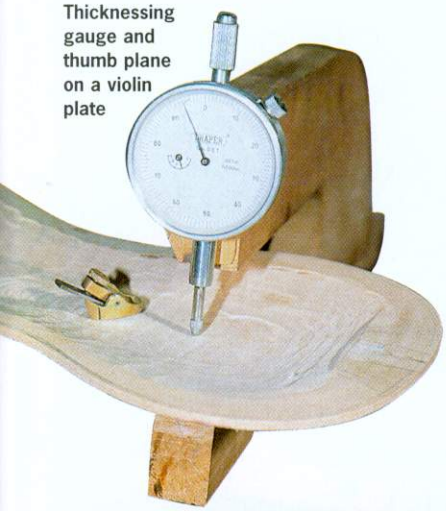
"So I decided to try making a violin from scratch. I had some cedar of Lebanon that I'd been using for making furniture, which had grown at Powys Castle. That was the nearest I had to a piece of spruce for the front, and was really inappropriate. I also had some

Building this covered bridge to the workshop was no problem for Tim, who used to make gates before musical instruments



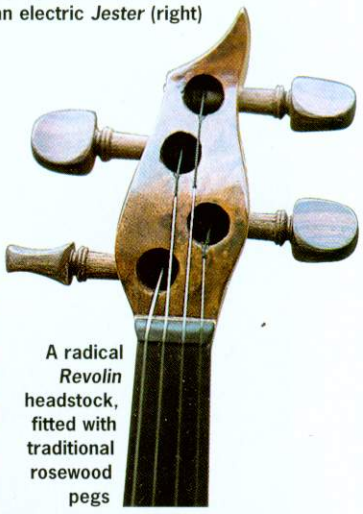
Tim's instruments come in many styles, including this asymmetrical body (left) and an electric *Jester* (right)

Thicknessing gauge and thumb plane on a violin plate

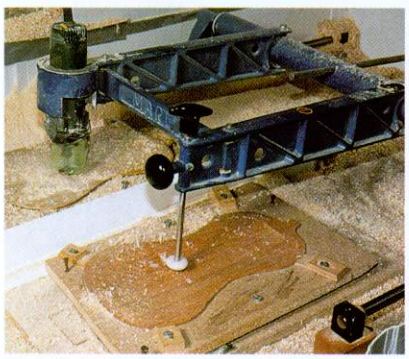


An old spice cupboard is used for storing finishes, plus pegs and inlays

The small wood store contains figured maple, spruce and finished violins



A radical *Revolin* headstock, fitted with traditional rosewood pegs



This American Marlin copy router enables a violin front or back to be initially shaped

Tiny brass thumb planes used for shaping fronts and backs

plain maple and a log of damson from the firewood shed which was used for the neck," he remembers.

"I got to the corners of the body and realised my old guitar was not like that! I thought I could still make it a similar shape without the little bits that stick out. It would be simpler to build, although it was likely to be rubbish because I really didn't know what I was doing. I just wanted to put something together and learn as much as possible."

"I used a really basic book (by George Buchanan) which also showed me how to make some of the tools. I made a bending iron with bits of pipe left over from doing the plumbing on the house," he says.

Tim actually made a pair of violins and was surprised how good those first instruments sounded.

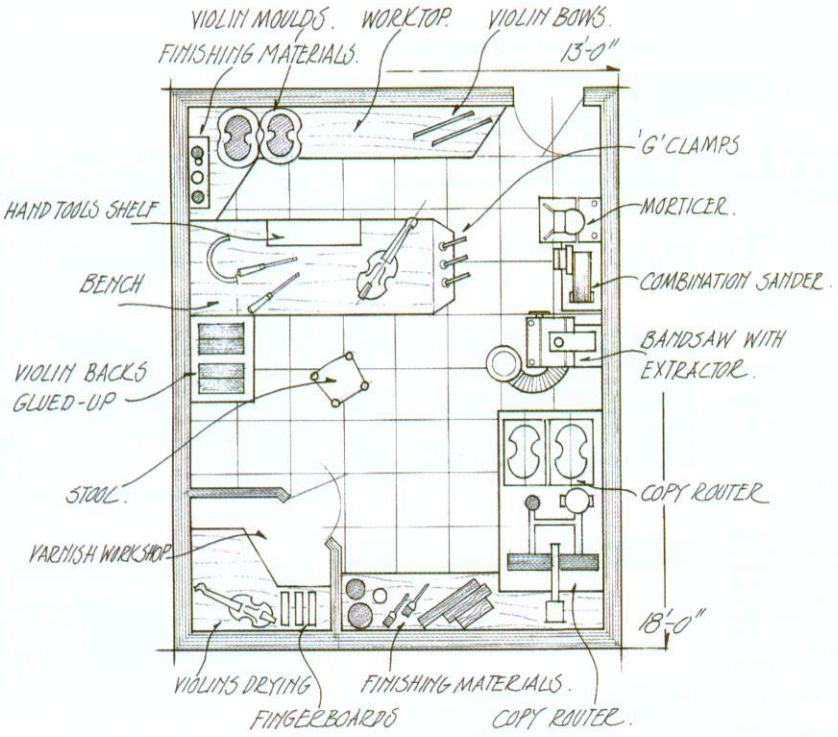
Within a year he had a tent at a local folk festival, where he sold two violins. The better one went for £325, which given the time it had taken to build did not make economic sense. But it was better than having them hanging on a wall, and meant he could make more. The following year he had about 12 instruments on display. To date, Tim has made over 200 instruments, most of them going to folk musicians.

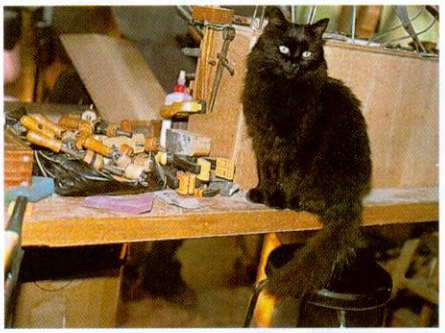
"Having always been associated with folk music, I could see there was nobody out there making violins for these people. Even good musicians were buying crummy old instruments from junk shops, or bottom end of the market stuff from expensive music shops. It just seemed to make sense to build violins specially for them. I didn't know what they would be like at that stage, that they may have a smooth shape or asymmetric corners, have pick-ups, or be coloured or have five strings," Tim explains.

"There was no point as an untrained violin maker starting off and presenting myself to the classical world. It's flooded with excellent traditional, qualified makers. They're not going to look at a chap from the Welsh hills who says hey, I've made some violins."

"Because my violins are odd shapes, people notice them when they're used on stage, or in a session. So they ask who made them. The bodies are a result of me going hey, violins can be like this or that. If I made beautiful Stradivari copies

SHOP LAYOUT: Tim Phillips





Black Cat, highly esteemed workshop resident...

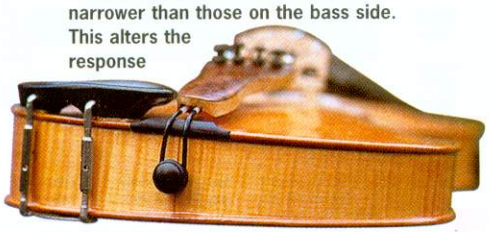
Each wedge of this Welsh-grown Norway maple contains a violin back, ribs and neck

A Record morticer is used when shaping the scroll headstocks

Traditional specialist hand tools are crucial to a luthier, knives in particular

An assortment of violins and violas on display in Tim's showroom next to the upstairs workshop. Prices start at about £1650

Ribs on the treble side of a *Revolin* are narrower than those on the bass side. This alters the response



perfectly I wouldn't have got anywhere as a violin maker, there's so much competition. If you have a traditional Strad copy, who comes up after a concert and asks where you bought it?" asks Tim.

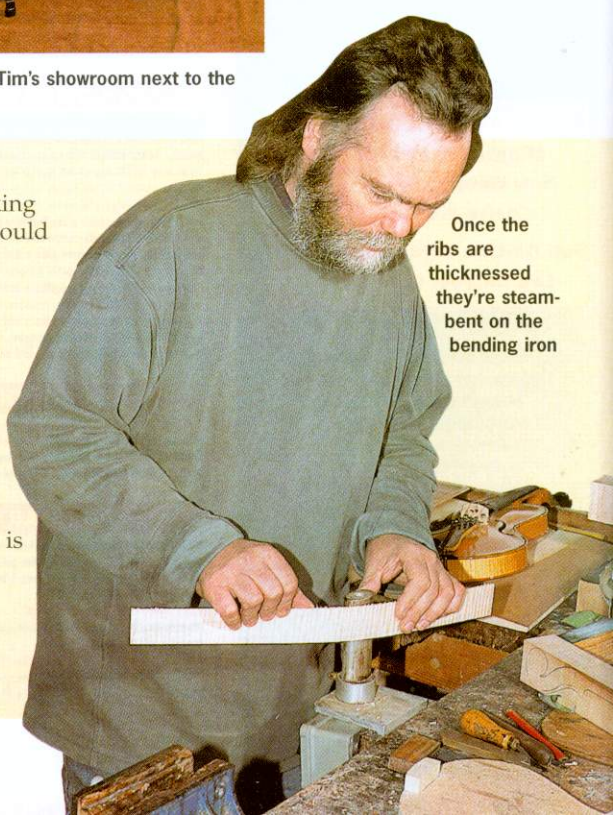
"The asymmetric body is my most recent violin, though I'd tried this a few years ago but didn't have the shape quite right. I like them because I can make the F holes different. With the basic shape it's really important the length and width are exactly right, and the internal volume is somewhere near right. Physically you have to be able to pick up the violin and play it with your eyes shut and not know what shape it is. With any violinist, if they're going to buy one it's got to feel like their own instrument. My instruments may look radically different but they're not really."

"The better you get at violin making the less specialist tools you need. I could do without my power tools but I couldn't manage without the traditional ones. A plain luthier's knife is brilliant. Just a piece of steel in a wooden handle, but there's a huge amount of work you can do with it, carving scrolls and so on."

"I'm not naturally good at woodwork, I came to this because I really like violins. There's a certain enigmatic quality to them. Each one is different, even if you try to make them the same," Tim admits.

www.timsviolins.supanet.com

Words by Phil Davy
Photos by David Askham



Once the ribs are thicknessed they're steam-bent on the bending iron

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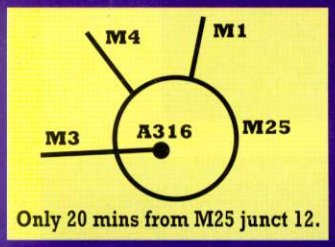

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E/B TKHS315EP saw bench with sliding table	£439.00
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Dewalt DW790 1000W auto switching wet or dry	£189.00
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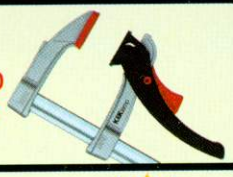
NEW

Klik Clamps



Buy 2 x KLI 120 (8") for **£28.50**
or 2 x KLI 125 (10") for **£29.95**
(depth 80mm on both)

Uni Clamps

NEW

Buy 2 x UK30 (12") for **£24.95**
or 2 x UK60 (24") for **£26.25**

GH All Steel Lever Clamps

Ref	Opening	Depth	RRP	Special Offer
G20H	200mm	100mm	£48.67	£23.95
G25H	250mm	120mm	£56.20	£28.50

Ban 700 Band Clamp

Ref	Capacity	Strap	Angle
BAN 700	7m/23ft	25 x 1	60°-180°

RRP £40.33

SPECIAL OFFER £29.95

Ref	Description	RRP	Special Offer
BVE	Extra set of 6 angles	£10.08	£8.50

TG Screw Clamps

Ref	Opening	Depth	RRP	Special Offer
TG-20	200mm	100mm	£19.69	£14.60
TG-30	300mm	140mm	£24.78	£19.40
TG-40	400mm	175mm	£27.88	£22.80

Deep Throat Clamp

Ref	Opening	Depth	RRP	Special Offer
TG40T30	400mm	300mm	£86.36	£59.50

WS Angle Clamps

Ref	Max Travel	Max Opening	RRP	Special Offer
WS3	300mm	2x55mm	£29.83	£24.50
WS6	600mm	2x100mm	£40.75	£34.50

SVH Floor Clamp

NEW

For laying laminate floors etc.

Ref	Opening	Capacity width mm	RRP	Special Offer
SVH400	4000mm	120	£24.44	£17.50

GS11 Mitre Clamp

Ref	Opening	RRP
GS11	105mm	£114.31

SPECIAL OFFER £69.95

K-Body Clamps

Ref	Opening	Depth	RRP	Special Offer
K30	300mm	85mm	£34.94	£26.50
K60	600mm	85mm	£44.17	£27.80
K80	800mm	85mm	£49.56	£30.40
K100	1000mm	85mm	£55.28	£33.50
K125	1250mm	85mm	£60.37	£37.95
K150	1500mm	85mm	£66.08	£39.90

K200 & K250 available on request.

Maxi Accessory Pack

Buy a pack of Maxis to make a bench vice for your K-Body Clamp

Ref	Contents
SW2	2 x Maxis in each pack

SPECIAL OFFER £39.00

GRZ Parallel Grips

with soft grip pads

Ref	Opening	Depth	RRP	Special Offer
GRZ-10K	100mm	65mm	£47.12	£34.90
GRZ-20K	200mm	65mm	£59.78	£39.75

EHZ Powergrip

Ref	Opening	Depth	RRP	Special Offer
EHZ-30	300mm	100mm	£36.60	£28.50
EHZ-60	600mm	100mm	£42.77	£32.50

EKT-55 Edge Clamp

NEW

Ref	Opening	Depth	RRP
EKT-5510-55mm	0-45mm		£42.77

SPECIAL OFFER £29.95

KT Edge Clamps

Quickly converts a TG clamp into an Edge Clamp

Ref	Description	RRP	Special Offer
KT5-1	Single Spindle	£14.63	£9.99
KT5-2	Double Spindle	£16.87	£13.50

Heavy Duty 3 Way Edge Clamp

with extra depth

Ref	Opening	Depth	RRP	Special Offer
KT8-3	80mm	80mm	£60.37	£39.95

BS3N Holdfast Clamp

Ref BS3N
Opening 200mm
Depth 120mm
RRP: £114.28

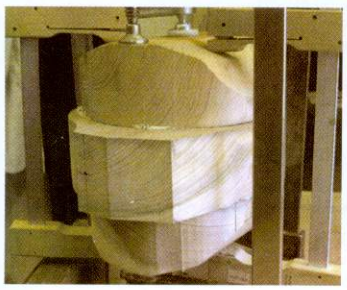
SPECIAL OFFER £45.00

FREE DELIVERY ON ALL ORDERS OVER £90.00 NETT

Country seats

Bench seats are among the simplest projects you can make for the garden but designs vary greatly. Two different approaches from **David Cockburn** and then **Mark Houghton** will help to get you going

Turning the leg spheres and adding plinths



01 The spheres are laminated up from several smaller sections. The centre one is larger to accommodate the spigots

02 Turn the spheres between centres and form the spigots. Penny washers nailed in place help strengthen these

03 The scotia mouldings around the feet can be routed if you have a large enough cutter, otherwise carve them

04 Drill the plinths and crosspieces with Forstner bits mounted in a pillar drill to take the spigots and dowels

Seat 1: Ball and pediment bench

PROJECT GUIDE
Difficulty
Intermediate
Time
One weekend
Type
Garden furniture

This chunky design from **David Cockburn** involves some simple but large scale turning and a little basic carving work to complete

The storms towards the end of the last century are said to have blown down 15 million trees across the south of England. Some beautiful and interesting wood came into the hands of furniture makers and sculptures. However, not everything blown down and converted to planks was of the best quality.

Find some cedar (Lebanon, Deodar or Atlantic), as I did, and you will have wood which is great for garden furniture and cheap enough to use in large pieces. This is important because, in the relatively large space of a garden, the shapes need to be bulky enough to read from the other side of the lawn and yet there must also be enough interest in the wood for it to remain visible from close up.

Another important benefit of cedar is that it is naturally resistant to decay so that it does not need to be soaked in poisons to deliver a long life. While oak and teak share this property, they are likely to be too expensive for this design.

The discolouration from weathering, knots and splits in cedar ensure there is plenty to look at when you are sitting on the bench. Other things being equal, big pieces of wood also lose their strength from decay more slowly than small ones.

The dimensions in the cutting list will give a two person bench which is the right size for many small gardens but you can make it anything from one to two metres long while maintaining the same height and width.

Making the seat

1 I had my cedar flat sawn into 75mm planks of appropriate length using a mobile Trekkasaw. An interesting article on this saw is available on www.forestmachinejournal.com/autotrek.ssi. There are operators with these saws in most counties and you can either ask them to come and saw your tree where it is, or take the log to them if you have the the necessary transport for the job.

The amount of timber you get from a typical 750mm diameter log is substantial and you may wish to make a deal to pay the sawyer with some of the timber. The planks produced will be rough surfaced and quite accurate. They'll also be too heavy and big to manoeuvre into your workshop and through a band or table saw, unless you have a strong helper. Get around this problem by cutting them up at the woodpile using a heavy-duty SkilSaw, which will have no problem handling the load, and then completing them at the bench.

2 Use turned dowels and glue rather than nails or bolts for assembly in order to help keep wood deterioration at bay. Careful detailing will allow water to drain away rather than standing. There is now a choice of adhesives which you can rely upon for outdoor work. Polyurethane glue (Gorilla) is less trouble than epoxy and has better gap filling properties than yellow glue (Titebond II). You could also use Extramite or resorcinol. Glues do not have an indefinite shelf life so you should buy them in small quantities and use the one brand for several different tasks.

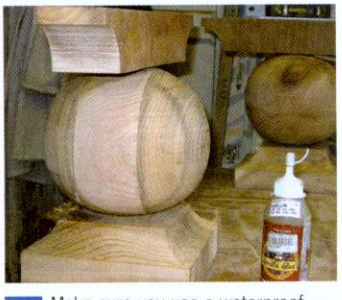
3 The legs of this bench are large turned spheres. Glue together three 225mm diameter disks which you have cut on the band saw. Most full-sized lathes can turn this size but if yours does

The two top planks gently bevel towards the centre where there is a small gap

05 This isn't fine woodworking but even so it's worth sanding the components to a reasonable finish

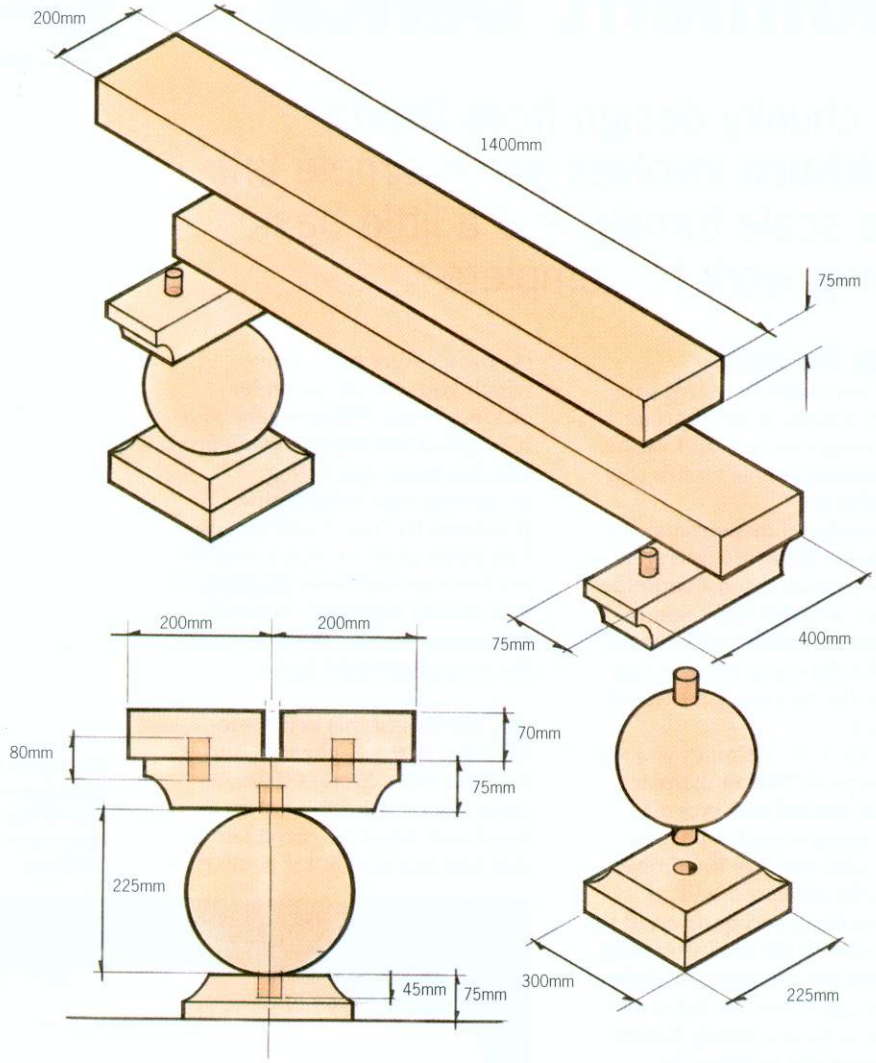
06 Try the spigots on the spheres in there relevant holes to check the fit and that the spheres bed neatly

07 The dowels joining the cross pieces to the bench top are turned as well to fit their drilled holes



08 Make sure you use a waterproof glue such as a polyurethane when you glue up the legs assemblies

DETAILS: **Bench construction**



CUTTING LIST

Part	Qty	Mats	Length	Width	Thkns
A Seat planks	2	Cedar	1400mm	200mm	75mm
B Cross rails	2	Cedar	400mm	75mm	75mm
C Spheres, centre	2	Cedar	225mm	225mm	75mm
D Spheres, sides	4	Cedar	225mm	75mm diameter	
E Plinths	2	Cedar	300mm	225mm	75mm
F Dowels	4	Cedar	80mm	32mm diameter	

Cutting lists give the full length of a piece including the joint but not wastage. Add 5mm in the width and thickness for sawn material.

not, you will just have to scale them down. The centre of the three disks should be cut from a piece of wood 305mm long so that you can create a spigot at each end. These will be the dowels which you use for assembly.

Run your lathe slowly to limit the effect of an out-of-balance workpiece. Turn the spheres using a heavy gouge as there is a fair bit of wood to remove and you will want to leave plenty of texture on the surface. Do the turning in two stages. First, define the diameter at the equator, measure it and make the distance from north to south pole the same. Then turn the curves which join these fixed points. Use the narrow skew to turn the spigots, as they have to be accurate in diameter.

4 The two spheres sit on rectangular plinths. Chisel a scotia moulding around the top of them by hand or use a 38mm radius router cutter with the router mounted on a table. Use a No 12 wooden moulding plane or a microplane file to finish them off nicely. The end grain should be cut first to minimise tearout.

5 Even if the plank you have is wide enough to make a good sized seat, you should have a gap in the middle to allow water to drain. Make the crosspieces, cutting the mouldings on the ends with the bandsaw. The seat planks will be doweled and glued to these crosspieces. A scrub plane is a good tool for shaping the seat planks. Thin them down to 60mm in the middle and put a 30mm radius curve on the outside edges for comfortable sitting.

6 Other methods are acceptable, but the safest and most accurate way to drill holes in the crosspieces (two of 32mm and one of 45mm on the other side) and the seat planks (one 32mm hole at each end of each of them) is with a Forstner bit in a drillpress.

7 Do a dry run of the leg assembly to ensure that everything will fit and then coat the dowel holes with glue and assemble everything at once. Additional glue on the top surface of the crosspieces will improve rigidity and stop water from being trapped. Only when everything is wedged level and square, should you tighten down your clamps.

8 There are garden furniture finishes and stains, although you could just leave this bench to weather to an interesting and natural grey colour. Annual refinishing will likely be needed to resist the impact of English weather if you do want to maintain a finished look.

Place the bench on a gravel pad to keep dirt from splashing on it and retaining moisture, and you can expect to get 20 years out of your finished piece.

Adding the tops

09 You might need to shim the cross pieces slightly to adjust them for level as you glue up the leg assemblies

10 Cut the top from two sections of cedar plank. Finish them with a gentle bevel towards the centre gap

11 Glue and dowel the finished tops to the crosspieces and set on a flat surface to dry

This easy-to-make hardwood bench seat from **Mark Houghton** will bring an elegant grace to many a secluded corner

Seat 2: A simple bench

Chunky hardwood furniture has always attracted me, and so using some of my stock of 60mm thick ash planks seemed the ideal choice when I decided to build a strong, simple and elegant bench for the garden.

This design uses ash but you could easily use any durable timber or even softwood if it is suitably treated to withstand the outdoor life. You could also adjust the dimensions to suit your needs.

Making the bench

1 The top of the bench is 1400x280x50mm. I cut the timber roughly to size and slightly overlength. How you prepare the timber depends on the tools that you have available. My own planer can manage up to 15cm widths so I made the top from two pieces of planed and squared oak. These were joined together using a biscuit jointer. The final piece was then passed through my portable thicknesser to bring it down to the final thickness. If your thicknesser can't manage this you could use a belt sander to tidy things up.

2 The top then needs to be cut to length, a job for which I used my Skilsaw. First a batten was clamped across the timber to guide the saw. As I didn't want to overload the motor, I made two passes with the saw, the first at 30mm and the second at full cutting depth.

3 The two legs measure 350x240x50mm. Again, these were planed up as two pieces which were then biscuit jointed together before being tidied up. The pieces were then carefully cut to length.

4 The legs are screwed to the top of the bench, after they had been fitted into housings to reduce the danger of the legs wobbling around. The positions of these housings are marked out and then the majority of the waste, down to a depth of 20mm, is removed with the router. I used a bearing guided cutter running against a melamine offcut. If you haven't got a router you could make a series of cuts to the right depth with a Forstner bit. The corners were then squared up with a chisel.

5 The screws which hold the legs in place pass through the bench down into the top of the legs. I wanted to hide the unsightly screwheads and the normal practice here is to sink the heads beneath the surface of the timber. The hole can then be filled

MATERIALS YOU'LL NEED

Timber

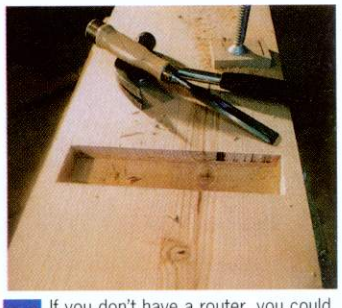
Mark used ash for his bench but durable hardwoods such as oak, iroko or sapele could also be used

Shaping the top

01 The bench top is made from two pieces of timber biscuited together and then passed through a thicknesser

02 Each leg is cut to length by making multiple passes with a Skilsaw running along a batten

03 Where the legs sit in the housing on the underside of the bench top, use a router to remove most of the waste



04 If you don't have a router, you could use a drill and Forstner bit, and then tidy up the corners with a chisel

with a length of dowel or a timber plug. I decided to hide the heads beneath square pieces of mahogany. This would contrast nicely with the lighter ash and make a decorative feature.

The first step was to mark the position for the pieces of mahogany. I then removed the waste down to a depth of 10mm with the morticer. Alternatively you can drill out most of the waste with an ordinary drill bit and then square things off with a chisel. The chisel in my morticer was 12mm and so I then machined up the rods of mahogany to match this. Once all the holes were cut I could then continue drilling down through each hole with an ordinary lip and spur bit to allow the screws to penetrate easily.

6 The legs were then glued at the ends and fitted in the recesses before the screws were inserted. You might find it helps to drill small pilot holes in the end of each leg especially when using very long screws. Then I cut four small pieces of mahogany a few millimetres longer than the depth of each hole. I put a slight bevel on each face using the belt sander to make it easier to insert the pieces into the holes and make for a nice tight fit. A dab of glue and a tap with the hammer and each piece of mahogany was fitted. When the glue had gone off the excess was trimmed off with the pullsaw and then sanded smooth.

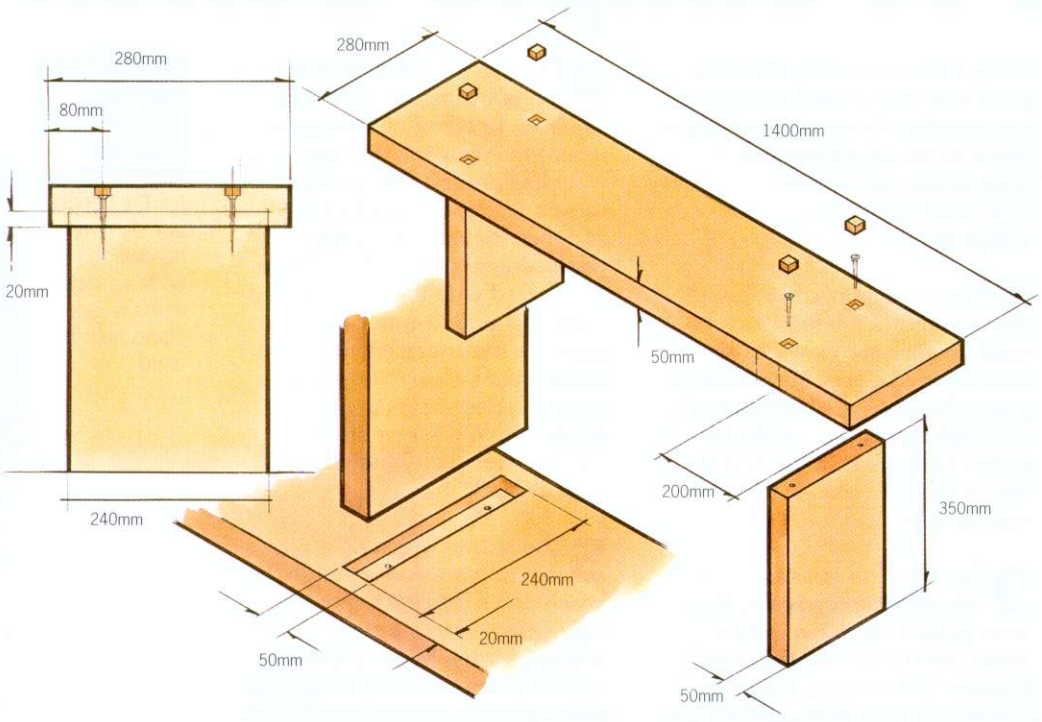
7 Left if its raw state ash weathers to a very dark finish. However, I prefer to use an oiled finish. This protects the timber from the weather and brings the figure of the timber to life, as well as enhancing the contrast between the oak and mahogany. I rubbed four coats of Danish oil into the bench with a cloth.

CUTTING LIST

Part	Qty	Mats	Length	Width	Thkns
A Bench tops	1	Ash	1400mm	280mm	50mm
B Legs	2	Ash	350mm	240mm	50mm
C Plugs	4	Mahogany	15mm	12mm	12mm

Cutting lists give the full length of a piece including the joint but not wastage. Add 5mm in the width and thickness for sawn material.

CONSTRUCTION: Simple bench



11 To help the bench resist the ravages of weather, it was given four coats of furniture oil

10 Next smooth down the top of the bench with a belt sander, moving only in the direction of the grain

09 Use a Japanese pullsaw to remove as much of the excess mahogany as possible, without scoring the bench top

Attaching the legs to the top

05 To fix the legs to the benchtop, first cut a small square hole in the top with a morticer to accept a covering plug

06 Drill a central screw hole in each of the mortices for the main fixing screws

07 Prepare a length of square cross section mahogany to the same size as the hole, with the edges bevelled to fit

08 Glue and fit the mahogany pieces into the squares and then lightly hammer them into place

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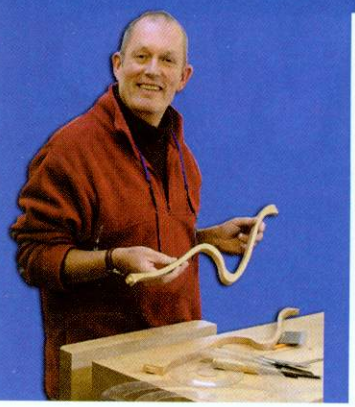


MASTERCLASS

***David Savage's* expert comment from his own furniture training workshop**

Learning to see

David Savages sets out the basic elements of analytical drawing that will help you every day in your woodworking to see the shapes more clearly and improve your working practices and techniques

Last month I hope I convinced you of the usefulness and value of having a go at drawing, and that drawing is only a means to an end. It's not the drawing itself that matters but the way that drawing literally opens your eyes to seeing the world around you. If we learn how to draw, we see better, and we are able to make our furniture better. We respond to shapes and forms in a different way. But how do we do it, how do we tackle this monster? The same way that we eat an elephant, a bit at a time.

You Can Draw

I've said this before and I'll say it again. You can draw, everybody can. The only thing you have to do is to start from a place that's achievable. Don't start with really difficult things, start by drawing really easy things. Don't go for things that move, go for still objects. It's called a still life.

Choose some objects that are square and straight edged rather than curvy. I picked out a cardboard box and a couple of timber samples and a sheet of card, set them up and put a light on them. This will help to explain the shapes a little more clearly.

Next, set up your drawing board, which can be a simple sheet of MDF of any convenient size, with a sheet of good quality cartridge paper taped or pinned to it.

The important thing now is that you set the board up in the right place. An easel is a useful piece of equipment. You can substitute the back of a chair and lean the drawing board against that, but to be frank some form of easel is going to be an essential piece of equipment if you are going to attempt this. Thin, light sketching easels are relatively cheap from art shops. One that stands on the floor rather than on a table top will give you greater flexibility.

Now, the thing to get right here is the relationship between your still life, your drawing board and where

you are going to stand. You want to be able to stand away from your easel so that you can extend your arm to its full length and just touch the drawing board with your pencil. It will be from this point that you are going to look at the still life.

Stand with the paper at the right height so that it is exactly alongside your still life. If not adjust it – move the easel a bit further forward or a bit sideways and get the paper at the right height on the drawing board. Mark the position of the still life and the easel so you can come back and set it all up the same tomorrow.

The essential thing is that you want to be able to transfer the height and width of your still life, full scale, on to the sheet of paper. You are not making a drawing that's smaller or larger than the object, but exactly as you see it from wherever you are standing. This is most important, you are not enlarging this still life or reducing it in scale. You are drawing it at the scale you can actually see it. So place that paper very carefully.

Tools of the Trade

Your materials will be a pencil, probably an HB or B or 2B, depending on how you like to draw. A 2B pencil is thick and dark and is made from a softer lead. HBs are harder and give a lighter line because the lead is that little bit harder. I always start with an HB pencil as the lines are easier to rub out and the first lines I may put down are likely to be rather tentative and light.

A good eraser is also a useful piece of kit. I buy erasers that I can cut up with my knife so that I can create a sharp edge on the eraser and take out an area right up to the edge of something that maybe I want to leave in.

Picture It

So, the first thing is to look at the still life and try and picture it on the paper in front of you. Think about how it will relate to the four edges of the paper. You are composing the picture and trying to find a place for the various objects on the page. Do you want that large block in the centre sitting dead centre or slightly to the right a bit or slightly to the left? Try and avoid being too central as it can be a bit dull.

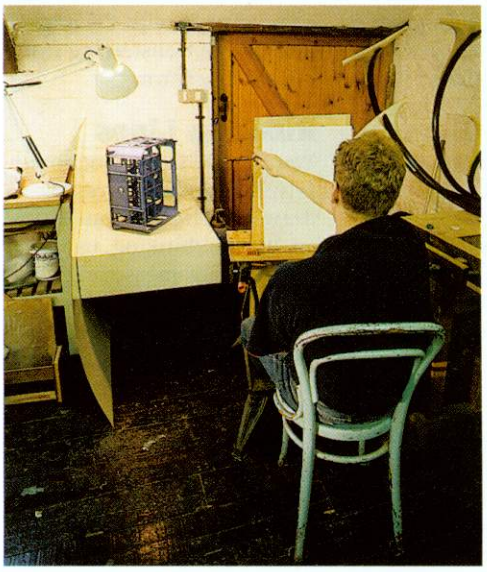
The first marks on the paper are psychologically the hardest. It's as if that piece of paper has a perfection, a niceness, that is difficult to damage or dominate. Don't be intimidated by it, make a mark then rub it out, then make another one. Dominate that piece of paper, it's yours, you're in charge.

First Marks

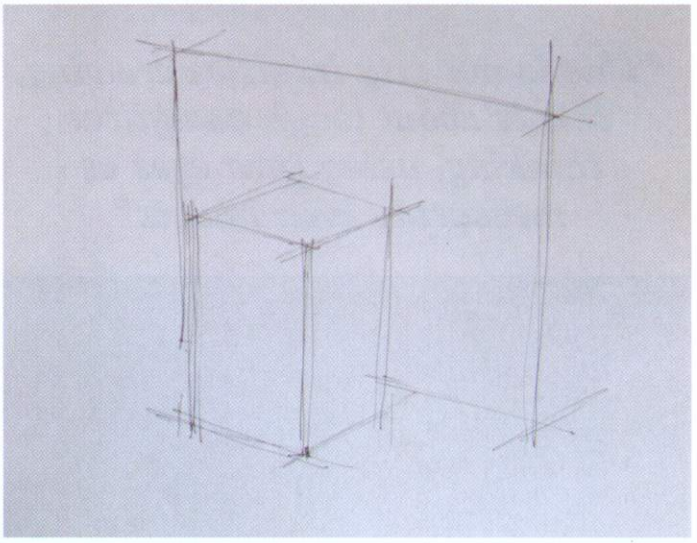
Start close up, look at and put a line down for one of the nearest corners. I chose the nearest edge of the large cardboard box as my starting point and made a vertical line down to show where that edge would be. The line was longer than the height of the box but that actually doesn't matter. That's my first point and every thing I draw now will come away from that first nearest edge.

Now I look at the still life hard and try to see how tall that box is. Looking hard is the key – remember most of us use our eyes to walk around lampposts not to really see. I want to put two small marks on that line, one to indicate the bottom corner of the front edge of that box and one to indicate where the top is. I look across and try to transfer those two points from the real object to my drawing .

Now, you have seen artists standing around squinting at their drawings through one eye and holding their arm out and putting a pencil up. Well, this is basically what they are doing. Close one eye (you will have a dominant eye and I'll tell you how to find that in a minute) and hold your pencil sideways; a nice long pencil is useful for this. Hold it horizontally on the top of that box just on the point where the flat of the top meets the sides and that front corner. Now transfer it horizontally across to your drawing. Just swing your body slightly sideways. Now you can make a little mark on your drawing.



By maintaining constant positions for yourself, the subject and the paper, drawing should simply become a task of transferring a line from on place to another at exactly the same size



First steps involve simply putting down straight lines and determining the relationships between them. Simple!

"Don't be intimidated, dominate that piece of paper, it's yours, you're in charge"

Do the same thing with the bottom of that line, where that corner of the box sits on the piece of card. Put your pencil up horizontal on that spot on the still life and move it across to your drawing.

You now have two little marks which will give you the position of the top and the bottom of that box. In the photographs I am using a long thin piece of ebony stringing. This helps to show my students how I am visually transferring points in space that exist on the still life on to my page. I am just looking at the still life and finding the equivalent height and spot on the piece alongside the still life (this is why the position of the paper is so important).

Creating Surfaces

Having got that front edge of the box drawn in, we now need to put lines off from those two single front lines to use as an angle to delineate the top surface of that box. Again hold your arm out at full length – this time the pencil is not held horizontally but at the angle of the edge where these two planes, the top of the box and the front of the box, meet. Now transfer it – swing your arm over so it's now in front of your paper but is carrying that angle across. See on the ➤

paper where your line should be. Make a pencil line, just a guessy sort, on the paper, then go back up and look at the other still life. Put your hand up, put the pencil along the two planes and check that what you have drawn is somewhere near the line you want.

It is very hard to do this first time right because you're guessing where the line should be on a blank sheet of paper. But once there is something up there, and you can put your pencil on the junction of the two planes, carry it across to your drawing and see how far out your first line was by comparing it with the angle that you're transferring from the still life form.

Relating Lines

You can see this is not about arty, flouncy, intuitive drawing. This is about tough, analytical, thinking, using your eyes as measuring instruments. By standing in the same place every time you will always see your still life in exactly the same way. By having your easel and drawing in the same place you will always have your paper in relation to that drawing, and by carrying the measurements from the still life to your paper you are able to analyse visual relationships between surfaces and planes.

You put the line down and you check it against the real object, then come back to your drawing to see whether it's right or wrong, correct it and go back to the real thing, look again, measure, come back to your drawing.

What you're doing is putting down lines and checking their relationship to one another. Is the width of that box slightly too wide for its height? Take a measurement and check. Do this by putting your finger on your pencil and holding this out at arms length. By putting your finger along its length, you can take a measurement of the width of that box on your paper and check it against the width of your box on the still life.

The box in reality is a little bit higher than it's wide. Is the box on your paper higher than it's wide? Is it higher than it's wide in the same way that the still life is? All these things you have to check. Check the proportions of things, bear in mind we are working with quite simple forms here, – straight lines, cubes, rectangles. Are those vertical lines really vertical or are those lines wobbly a bit, are they leaning over. If you really want to check it use a plumb line, which can be just a bunch of keys tangling on a string – verticals are absolute in this world. If your straight lines are not straight use a ruler – it's not arty but who cares.

Relating shapes

Try not to bother too much about light and shade, about darkness and lightness, just look at the edge of the object and try to pin down the shapes and their position in relation to one another.

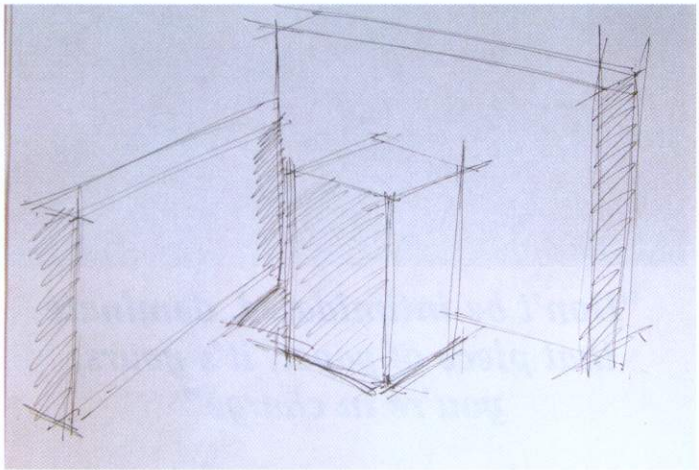
What you might find is that, as your drawing becomes more developed, as you put down not just that central box but the two pieces of timber samples at the back and side of it, that your composition is not exactly right. Maybe you want to make the thing a tad smaller than it is, or a bit to the left or a bit to the right, and at this stage you may have to rub out a great lump of the drawing and go back to square one.

But you will be doing that with much greater understanding of the visual form that you are trying to put down on paper, and the whole thing will come much easier. So don't be afraid of scrapping large parts of your drawing and going back to an almost cleared sheet of paper. This is an almost essential part of how we work with visual things.

Last Thoughts

I hope you are able to make the time to do this because drawing is such an important gateway into the visual world. The kind of drawings we do aren't important. The still life drawing we have done here isn't important, except for the fact that we have done it. The act of doing it enables your eye to see a little bit better. At least that's the idea! Lesson over!

"This is not arty intuitive drawing, this is about tough analytical thinking, using your eyes as measuring instruments"



Darkness and lightness, shadows and highlights come later. At present we are just looking at the relationships between individual line and shapes

David's classes in drawing are an essential part of the training his students get in his furnituremaking workshops

NEXT MONTH

David returns to pure woodwork next month by discussing a new carver chair design

Our 150th issue

Next month sees our 150th issue of *Good Woodworking* so join the team as we celebrate with a splendid issue packed full of informative tests, great things to make, superb competitions – we have **50 Stanley tapes** to give away plus **150 Snappy driver kits**, and there's your first opportunity to **win a complete workshop and tools worth about £12,000** and courtesy of those wonderful gentlemen at **Jet Machine Tools**), and all the best from the world of woodworking.

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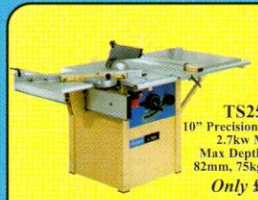

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60kgs Weight
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The
Workshop
Guide

Helping you get the most from your workspace

■ Jigs ■ Techniques ■ Workshop accessories ■ Storage

The great outdoors

When the sun is shining, what's better than working outside? **Phil Davy** reckons you should think about safety first, though

Think about it. The sun is shining, the birds are singing and you want to make the most of the British summer before the rain forces you inside again. If you're like me, you'll have a list of jobs to do on the house, whether it's painting the windows or replacing a door. Then there's making garden furniture or even adding some decking. TV shows have a lot to answer for...

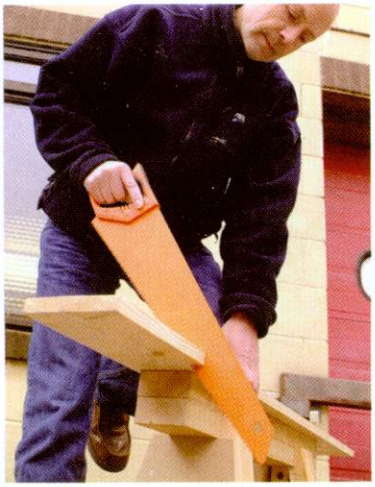
Most of us are aware of the potential hazards in a workshop environment. Step outside the door, though, and there are new problems to face. Many of these are common sense, but take a few minutes to think about how you will be working and the tools you'll be using. Safety is vital, whether working inside or out.

Power Supply

Using power tools outdoors can be risky, particularly if the ground is uneven. The risk of cutting through a cable is greater, so plan where you will run an extension lead before you plug in a tool. It may sound obvious, but check cables cannot be tripped over when you're using a power tool.

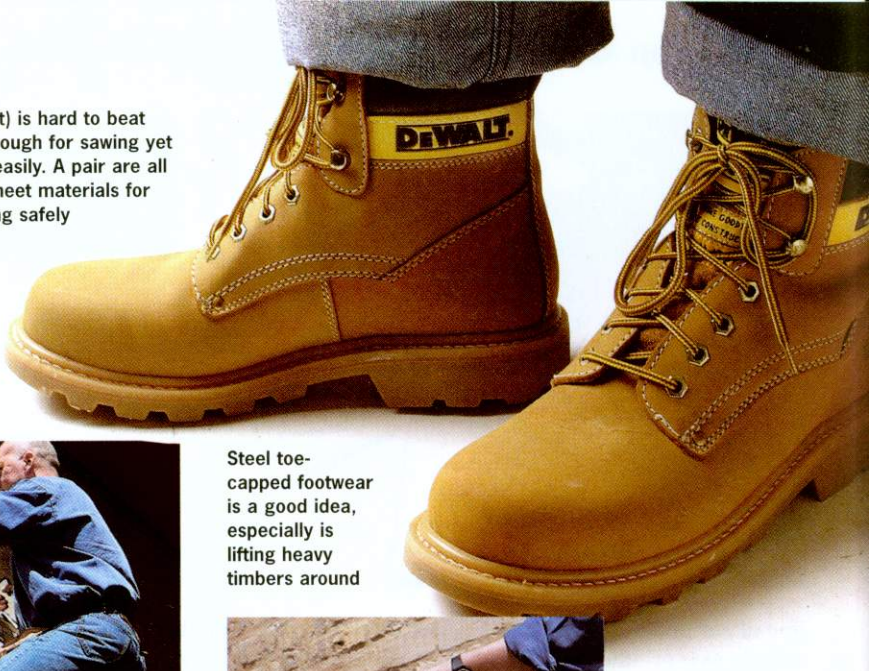
For safety you should always plug an extension lead into a Residual Current Device (RCD). This will cut off the power supply in a millisecond should you slice through the cable accidentally.

On British construction sites you'll find 110V power tools used exclusively. They reduce the risk of electrocution if a mains cable is dragged through the inevitable puddle, or a site worker hits a cable or pipe with an electric drill. Step-down transformers are essential for these industrially-rated tools. If you find yourself working extensively outdoors it may be worth considering such a system. But professional 110V power tools are usually pricier than their 240V cousins.

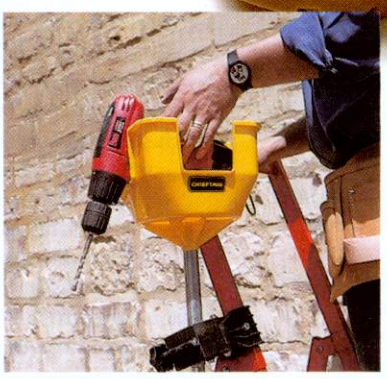


A simple sawhorse (left) is hard to beat outdoors. It's stable enough for sawing yet light enough to carry easily. A pair are all you need to support sheet materials for marking out and cutting safely

A ladder fitted with a standoff is safer when working at heights, especially under eaves. Keep one hand on the stile as you climb



Steel toe-capped footwear is a good idea, especially is lifting heavy timbers around



When working on a stepladder a tray or bucket at the top is useful for keeping those tools handy

Of course, with cordless tools there are none of these hazards, assuming you keep the battery charger indoors. But unless you're prepared to pay a lot of money for a professional cordless circular saw, for example, don't expect the same sort of cutting performance you'd get from a half decent mains-powered tool.

Workmate Wonder

Working outdoors means you no longer have the solidity of a heavy workbench and a vice that will hold everything rigid. There can be few households that don't possess a Workmate or similar, though. This is the ideal portable bench for exterior use. But don't use it to stand on, no matter how awkward the job or low the risk seems. They're simply not designed for that. A collapsing Workmate may dent more than your pride...

A pair of Workmates are perfect for working with sheet materials. Be careful to check the

Surefoot bases prevent a ladder slipping on uneven ground

Splayed legs fitted to the base of a ladder improve stability

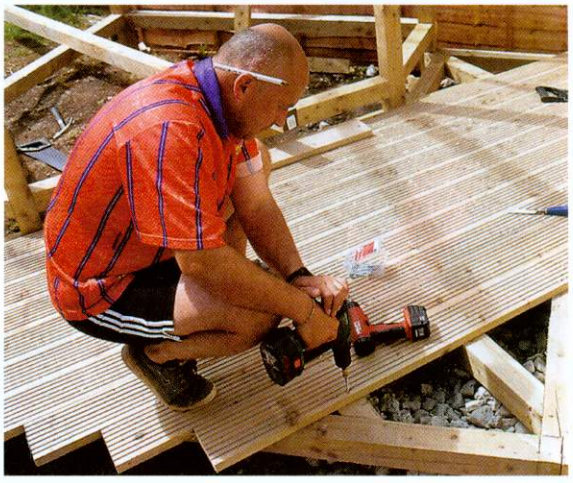
An RCD is an inexpensive way to guard against the risk of electrocution (front). A 3.3kVA, 110V step-down transformer will set you back about £60 (rear)

It's still advisable to wear protective clothing when working outdoors, especially

When using a ladder, the angle it makes with the ground should be about 75°. This is the equivalent of positioning it one unit out from the wall to four units up

He's not taking any chances...

When installing decking, fix the boards in place first before trimming them to length (left). Watch out for that cable, though



Cordless drill/drivers mean there are no cables to get tangled up or cut through accidentally (right)

line of cut underneath before using a saw or other power tool, though. Workmates have a nasty habit of having steel support arms and legs where you'd least expect them!

To avoid the expense of a second bench, build a support at the same height from offcuts. With heavy timbers, a couple of G cramps will stop work sliding around if it can't be gripped in the jaws.

Leaning Ladders

Unless you live in a bungalow, it's likely you'll need to use a ladder on occasions, whether it's for cleaning out gutters or easing a swollen window. If the ladder is wood and has not been used for a while, check it carefully, especially the rungs, before risking life and limb...

Aluminium ladders are generally a better bet, although watch out for overhead cables as you manoeuvre it. If you cannot get someone to stand on the bottom rung while you are up the top, place a couple of concrete blocks in front of the stiles to prevent it slipping. On uneven ground wedge up one side if necessary.

There are several products available to make your ladder safer, including cranked legs attached to the back of the ladder to give it a wider base.

All Hands on Deck

Watch almost any garden makeover TV show and you'll see that raised timber decking is still a popular DIY option. Hardly surprising, when you realise what can be achieved over a weekend.

Don't even think about machining the decking timber yourself, though. It's far cheaper to buy finished boards which typically come in 2.4m lengths. These will be pressure-treated with preservative, but it's still a good idea to add a final coat of outdoor stain for protection. Always wear protective gloves when handling chemicals like this, even if it states on the tin that contents are environmentally friendly.

For the support posts that will be set into the ground you should make sure that sawn ends are suitably treated first, even if pressure treated.

This type of outdoor project is where a portable circular saw is very handy. Rather than cut the boards to length before fixing, allow them to overhang the joists, particularly if you're working to a design that involves a diagonal pattern. It's quicker and neater to trim the ends with the saw. Nail a batten in place temporarily to run the tool against.

But whatever type of outdoor woodwork project you get involved with this summer, make sure you take time to relax and enjoy the results of your labours!

A big outdoor project requires careful planning of materials and budget. A simple scale drawing on paper is the best place to start

50 Project DVDs to win!

Outdoor projects included on the Forest Garden DVD include an elegant pergola. There are several decking projects, plus techniques on erecting a garden fence

Turn to page 72 to find out how you can win a fantastic Projects Guide DVD from outdoor timber products company Forest Garden PLC. Worth £7.99 each, we have 50 to give away!

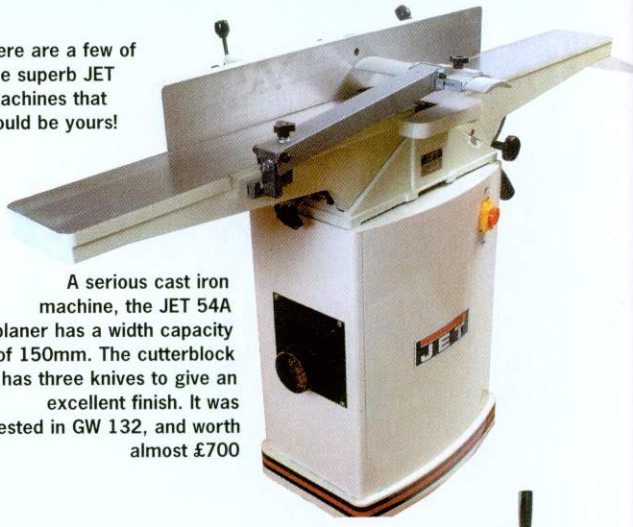
WIN a fantastic workshop full of JET machines!

To help us celebrate 150 issues of *Good Woodworking*, those fine people at **JET Tools and Machinery Ltd** have pulled out all the stops to come up with a fantastic competition. In fact, it's the biggest prize that has ever been offered in *Good Woodworking*. Not only will the winner receive a shop full of **JET** machines, but they'll win an actual workshop too!

The prize will be presented to the winner at the **Axminster Tools Show 2004**, which takes place in November at the Westpoint Exhibition Centre, Exeter. You will need to read the next five issues of Good Woodworking, starting with the August issue (GW 150), on sale June 9th. There will be a different question each month, but no purchase is necessary.

Alternatively full details will be shown on the new *Good Woodworking* website: **www.goodwoodworking.co.uk**

For more details of **JET** machinery, take a look at their website: **www.jet.uk.com**

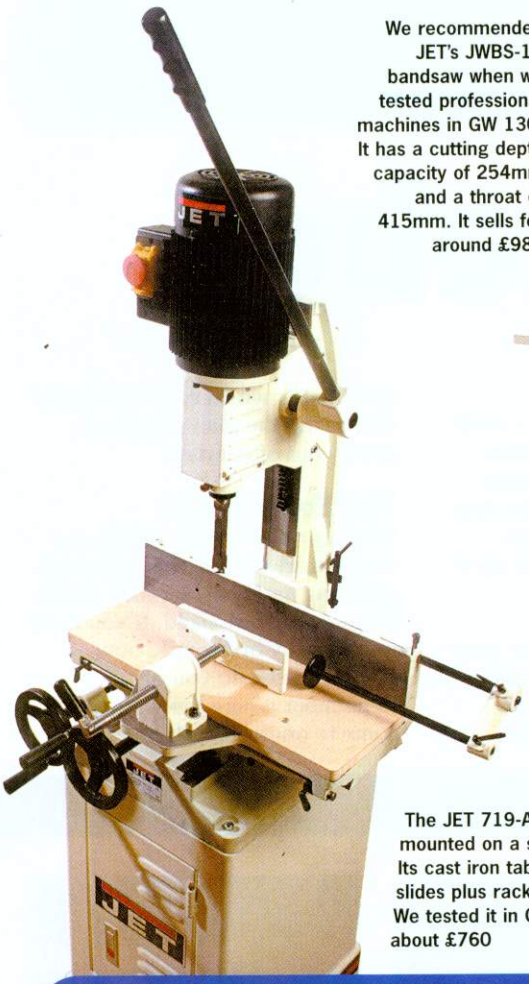


Here are a few of the superb JET machines that could be yours!

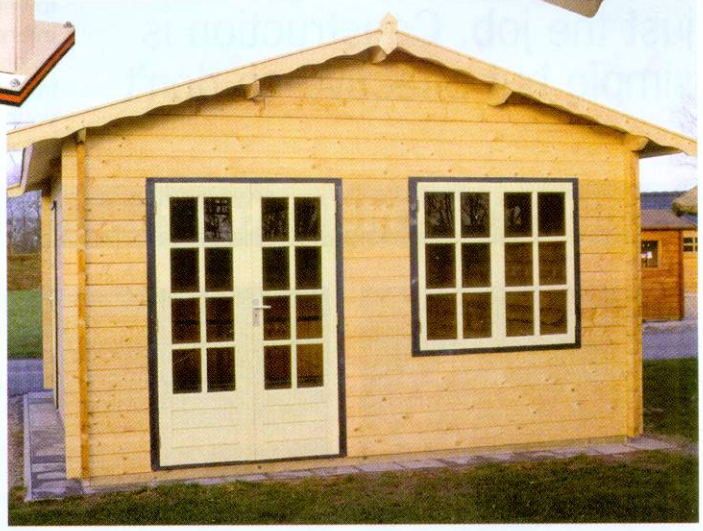
A serious cast iron machine, the JET 54A planer has a width capacity of 150mm. The cutterblock has three knives to give an excellent finish. It was tested in GW 132, and worth almost £700

We recommended JET's JWBS-16 bandsaw when we tested professional machines in GW 130. It has a cutting depth capacity of 254mm and a throat of 415mm. It sells for around £980

For big thicknessing capacities (330x155mm) it's hard to beat the heavyweight JET JPM-13CS thicknesser. Price is approximately £776 and we tested it in GW 132



The JET 719-A morticer comes mounted on a sturdy steel cabinet. Its cast iron table features dovetail slides plus rack and pinion action. We tested it in GW 136, and it costs about £760



Not only will the lucky winner receive a shed load of JET machinery, they will also get a timber workshop in which to use them! All you need to do is provide the space... **Full details of how to enter will appear in the August issue of *Good Woodworking* (GW 150), on sale June 9th! Don't miss it!**

Be a JET winner!

For this competition there will only be one prizewinner, but what a prize it's going to be! You'll need to see the next five issues of *Good Woodworking*, which will each include a different question. The competition will also be featured on our new website **www.goodwoodworking.co.uk**

Garden gazebo

Every garden needs a sheltered spot to sit and **John Marshall's** gazebo is just the job. Construction is simple but effective so don't

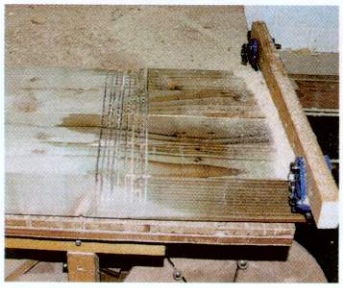
My wife and I had long thought about having a small gazebo at the end of the garden path, facing west, as the perfect setting to enjoy the end of the day.

As always, the dimensions given are for this job and are open to your own situations and interpretations. I strongly recommend that you bring to your immediate neighbours' attention your proposed building plans before you start to build your gazebo. It's worth considering and discussing the plan with them purely out of courtesy.

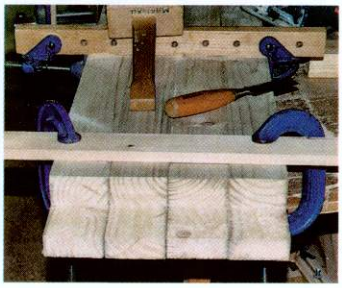
The Foundations

What appears to be a simple and straightforward job does need the planning and consideration all too frequently overlooked. If you have to build any brickwork, how many courses do you need? Remember where the seat will come to on the woodwork as you

Building the main structure



01 The chunky housings in the legs for cross rails are cut with a Skil saw then chopped with a chisel.



02 The same applies to the notches for the top rails. Cramp legs together and cut as one for speed and accuracy

03 The roof rafters can be cut in the same way to give the top bevel cut if you wish

04 The cross rails should be level and parallel when the posts are set into Metpost fixings (or set into the ground)

DETAILS: Gazebo construction

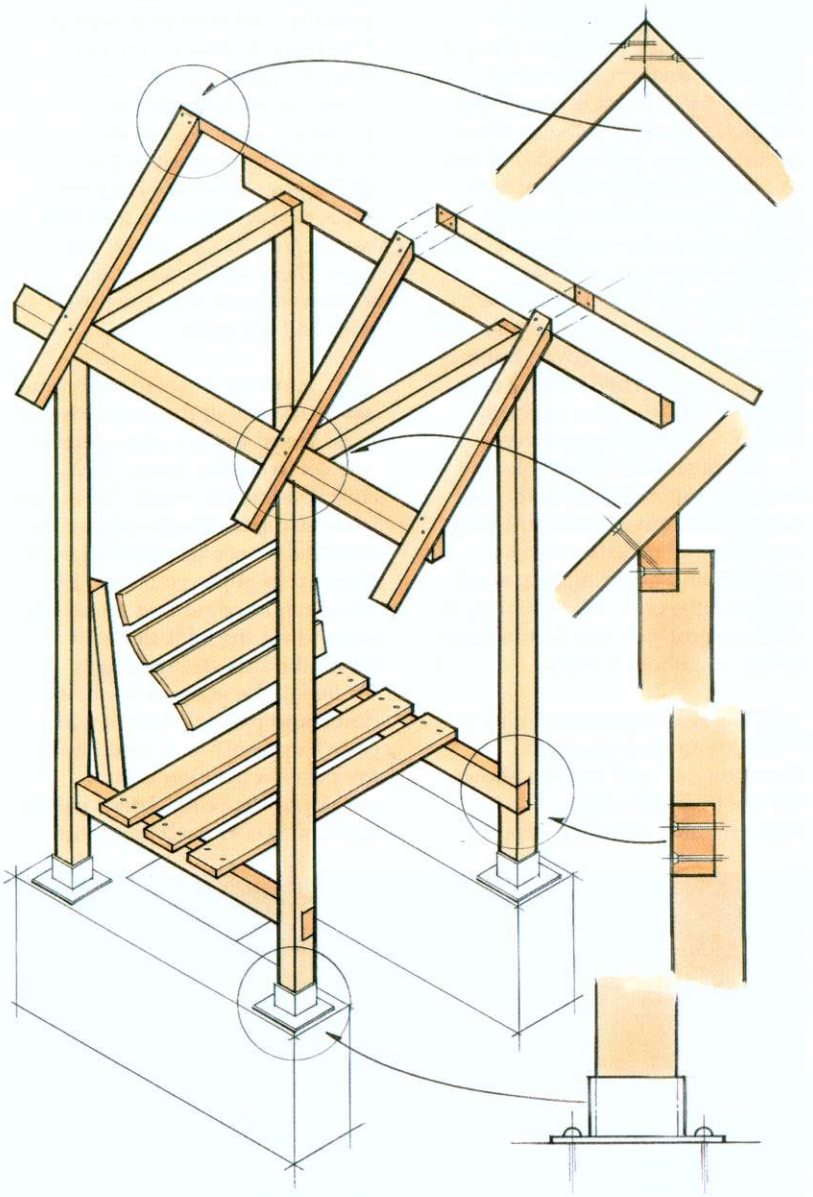
don't want to end up with a seat that is too high. What sort of bricks are you intending to use?

1 I made the wall a 9in standard build. This will need appropriate sized footings,18in wide and 6in deep of ¾in-to-dust crushed limestone. The footings should be as much again as the intended sized wall, with the wall built in the middle. I used a section of 3x3in post to compact it down. We went for old weathered standard house bricks obtained from a demolition site.

Because of the slope on our block paving path, the gazebo is built to a true level. That means it is not level to the surface of the sloping path but true level from a datum point, which will be the first course of bricks laid level along the back edge. Lay the bricks out in a dry run and cut any half bricks that you need before you start to lay them. Ensure that the lengths of the sides are the same and parallel. Use a large carpenter's or rafter square to get the 90° turn from the back edge, and use a tape or string diagonally to check for square. Above all else, don't mix up too much mortar unless you can lay bricks at a reasonable speed.

2 Once you have laid the back course all your levels will come from this, so use extra mortar to build up the front face brick on each of the sides and then work back from here. Interlock the bricks on the next course in standard building practice. I used three courses because of the depth of soil retained behind them.

Leave the brickwork to go off for about three to five days. Position the 'bolt-down Metposts' in the middle of the 9in brickwork. Don't drill too near to the edge of the bricks or they may crack and flake. I've used 16 10x45mm 'bolt-type' fixings (from Screwfix, £3.57 for 10). Make certain that the Metposts are in line and square.



The Woodwork

I intended to use 75x75mm PAR for the posts but the cost was prohibitive, so instead I bought four 2.1m fencing posts from the local building merchant. They had been rough sawn and treated with a preservative, which gave a rustic look. If you prefer a more refined look skim them with an electric planer then sand with 100 grit.

3 Mark each post with a positioning mark, FR (front

PROJECT GUIDE
Difficulty
Intermediate
Time
14 hours
Type
Garden structure
Costs
£90

MATERIALS YOU'LL NEED
Timber
John used PAR pine throughout except for the main posts which are 75mm fence posts. The cladding is shiplap, and you'll need about 40m of this

05 Check that the posts are parallel when the top rails are fixed in place. Cramp them at first then screw

06 The two seat back struts will help triangulate the structure and give it more rigidity in use

07 A temporary central raised upright will hold the front rafters while you set the second

08 Use the same technique to ensure the back set of rafters are perfectly parallel and level with the first

HARDWARE YOU'LL NEED

Metposts – 4
Express type rawlbolts – 16
Screws –
34 5x80 zinc coated
18 5x60 zinc coated
28 5x40 zinc coated
Galvanised clout nails – One pack of 2.5x40mm
Lead flashing 3m x 15mm wide
Copper nails – One pack 2.5x20mm
Clear Cuprinol 2.5 litres

right) as well as face side and edge (ie, FR back, inside or outside edge). This will be important when you come to mark where the joints are going to be. My normal practice when putting fence posts in any of the Metposts systems is to cut 20mm off the bottom and stand that end in 6in of clear Cuprinol for two days. This will allow the cells within the timber to draw up the Cuprinol through osmosis, extending the longevity of the post. This wasn't necessary for the top as this is under cover, but it is good practice when cutting each joint to paint the new exposed timber with wood preserver.

My posts are 1700mm long, from the internal base of the bolt downs. This gives sufficient height to walk under the front cross member and cladding but, most importantly, once the roof is on, it will not protrude and be offensive to my neighbour's view.

4 The seat is going to finish at 600mm from the path therefore you will need to allow for the 45x70mm side strengthening rails that support the seat and then for the 20mm thick boards that will form the seat. The back and sides are partially clad with four boards. This helps to deaden the noise from the main road that runs along our back hedge, as well as giving protection from the weather. If you want to put trellis all the way down the back and sides, you will need to add rails between the back posts at the tops. These can be 45x70mm sections and let in to the posts with half lap joints.

5 Clamp the posts together and mark out all the joints for the rails. I used my portable electric saw set to cut the joints, then, chiselled out the waste. On the top joint, clamp a straight edge at the correct distance from the edge of the joint to guide your saw. Use two straight edges and the same method for the joint that will house the side strengtheners.

Install the posts in the bolt-down and paint the joints with clear Cuprinol – you could hold the posts in position with a temporary fix with battens nailed to them. Secure each joint with two 5x80mm screws, drilling pilot holes and countersinking them first. The overlap at the back is to allow a couple of nesting boxes under the roof on either side; the 500mm overhang at the front hopefully will encourage swallows to nest under there. Secure a strengthener (noggin) between the two roof supports that protrude out at the front.

The Roof

6 To ascertain what angle you would like on the roof, find and mark the middle on the front noggin, clamp a straight edged batten at this point with about 600mm protruding above the noggin and use your spirit level to get it true. You will also need to work out how much overhang you are going to need on the rafter. Mark the position of the overhang on the rafter and place it on the outside edge of the roof support; adjust the rafter against the upright batten to give you your desired roof angle. Mark the rafter and lock your adjustable sliding bevel to this angle for marking the other sections.

There is no need for a ridge board on something as small as this. If you are working on your own, the easiest way to join the two rafter sections together is to position the first one and clamp it to the batten and to the roof support, then position the opposite one.

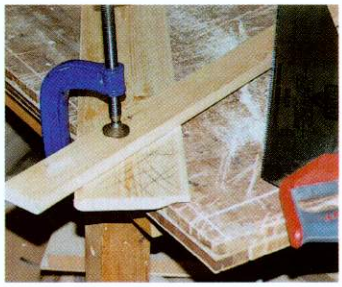
7 Ensure that you have a good tight fitting joint then screw them on to the roof supports first with two 5x80mm screws, then the apex angle joint using two 5x60mm screws, driving one home from each side, making sure that they are countersunk because the roof will need to lay flat on top of them. Adopt the same method for fixing the other two sets of rafters using your spirit level across the top of the apex to check

A gently reclining seat makes the gazebo an ideal location from where to watch final rays of a Summer's evening disappearing in the distance

Cladding the gazebo

09 A simple spacer block will ensure all the seat slats are parallel as you fix these in place

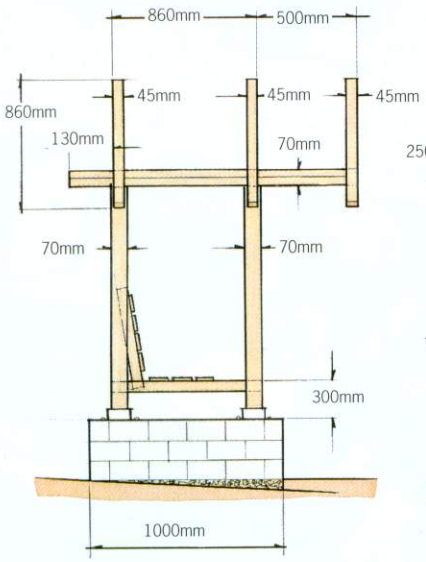
10 Temporarily hold the front shiplap in place while you mark off the slope of the roof at either side

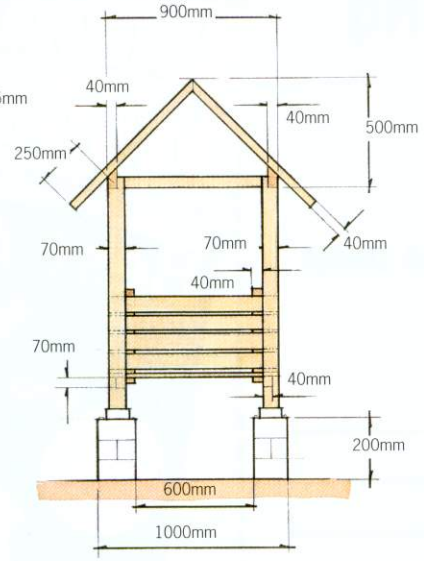


11 Cut snugly to the line so you get a neat joint between the front cladding and the roof. Neatness always counts!

12 Cut the side claddings short of the front and back by 20mm to allow for a fillet of timber to protect the end grain

DETAILS: Cabinet construction





alignment. At this stage, paint all the rafters, roof supports, noggin and side supports with clear Cuprinol as once the roof is on you will have the devil's own job to get a good covering.

8 I used 15x120mm shiplap cladding to match the garden shed, 42m at 86p per metre from Nixon & Knowles. I used 40mm round, flathead, galvanized nails. Clad the sides, making them 20mm short at each end to allow you to put in a fillet to hide the end grain. This is made out of ripping down surplus shiplap to get the right thickness.

The cladding on the ends needs to finish flush with the top of the rafters. Use your spirit level to make certain that the front cladding is level to be sure it doesn't haunt you in the future. There'll be a need for some cutting out around the roof supports that protrude out from the back.

9 Start to clad the roof from the bottom of the rafters, allowing a small overhang to let the rain drip off. Make these 20mm short at the front to allow for another fillet to hide the end grain. No matter how good you are at getting the pieces to fit snugly together at the top, the vagaries of weather will open them up and you should end up with a 20mm gap at the top.

Cover this with lead flashing over the joint. Ask for Code 3 lead flashing, 150mm x 3m, £13.42 from Travis Perkins. It's only going on a wooden roof, but you must secure the lead with copper nails. Make sure you use the clout type and not ordinary nails as there will be a chemical reaction between the lead and the wire nails causing both to corrode.

Be mindful to paint the roof boards with clear Cuprinol before you nail them down. You could also use feather board, tongue and groove or 12mm exterior ply and cover with felt.

The Seat

9 The backrest has to be set to your own comfort as does the width of the seat. Secure the back supports to the inside of the back posts and the inside of the side supports using two 5x80mm screws. I fixed a total of seven boards measuring 20x120x900mm using 5x40mm screws. Start with the back, then go along the side supports leaving a 20mm gap between them. This is to allow any water to drain away and air to circulate around them. Making tight fitting joints allows water retention and decay to set in. Again use screws that are countersunk to secure them.

Finishing

10 You could leave the gazebo painted in clear Cuprinol for a Nordic look, but in time air pollution and rain will make it look shabby. I chose to finish it in Forest Green Fence Care.

CUTTING LIST

Part	Qty	Mats	Length	Width	Thkns
A Posts	4	Pine	170mm	70mm	70mm
B Side (seat) supports	2	Pine	860mm	70mm	45mm
C Roof supports	2	Pine	1490mm	70mm	45mm
D Rafters	6	Pine	880mm	70mm	45mm
E Back seat support	2	Pine	610mm	70mm	42mm
F Noggin	1	Pine	800mm	70mm	45mm
G Shiplap	40m	Pine			
H Seat	7	Pine	900mm	120mm	20mm

Cutting lists give the full length of a piece including the joint but not wastage. Add 5mm in the width and thickness for sawn material.

If you're undertaking the job of building the gazebo on your own, you'll appreciate the help of a number of clamps to help hold sections in the right place

13 This is done on the ends of the roof timbers as well. Here one fillet will cover both exposed edges

14 Work from the bottom up as you apply the shiplap. Don't forget to allow a slight drip overhang at the bottom

15 A strip of lead along the ridge will finish off the roof, making it neat and waterproof - within reason!

16 You can make your own trellis to cover the sides or buy it from a garden centre

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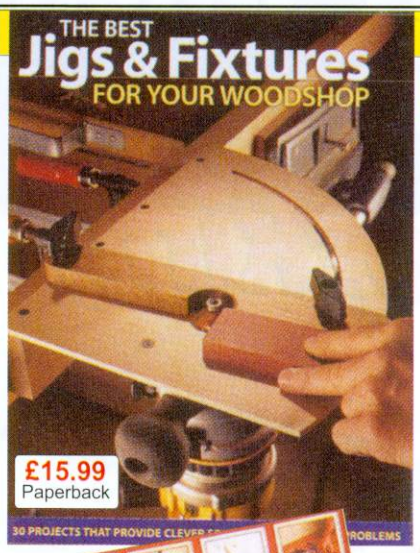

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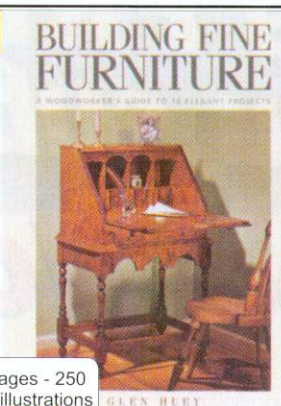

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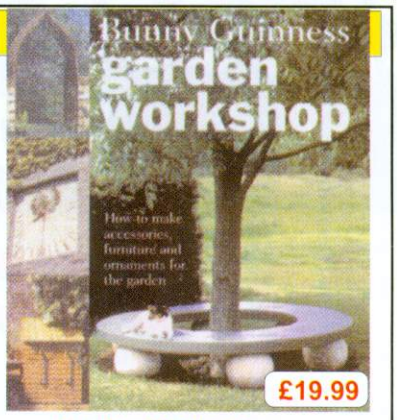

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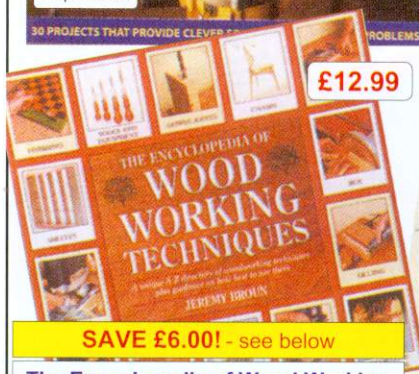

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DRAPER
THE TOOL COMPANY

What power tools do you need outdoors?

A portable circular saw is one of the most useful power tools for outdoor use, whether it's for cross-cutting solid timber to length, ripping boards to width or cutting up sheet materials. Always make sure you use an RCD device for protection if you should cut through a cable. (see page 40).

The **Draper PT1600K** circular saw kit is more than adequate for this sort of work. The saw itself has a meaty 1600W motor, and will cut timber up to 63mm deep at 90°. With the blade tilted to 45° you can make cuts up to 45mm deep. Two 24 tooth TCT blades are included in the kit, with a diameter of 185mm. A moulded carrying case is supplied. Typical price for the kit is around £60.

Cordless tools are incredibly useful outdoors, particularly a drill/driver. The **Draper CDH180V** combi hammer drill is rated at 18V, which means you can drill into masonry when necessary. Equipped with variable speed (from 0 to 900rpm) there are 17 torque positions, so driving screws should be no problem. It has a keyless chuck, forward and reverse and is provided with a one hour charger. Screwdriver and drill bits are included. Everything comes in a storage case, and costs about £42.

A router is arguably the most useful power tool for woodworkers. Even on a relatively simple project such as the table and seating, it can be used for adding a decorative chamfer or round-over to the edges of boards. The **Draper PT1200V** router has a 1200W motor, with variable speed from 16,000 to 30,000rpm. It comes with 6mm, ¼in and 8mm collets, various accessories and a moulded case. It costs about £50.

Once you've built the table and seating it will need a coat of preservative to protect it from the elements. Even an outdoor timber structure will benefit from a good sanding before applying the finish, though. The **Draper PT125V** variable-speed sander is ideal for this job, and features a 480W motor and 125mm diameter Velcro-backing pad. A dustbag is included. Cost is around £30.

Good Woodworking and DRAPER THE TOOL COMPANY

Garden picnic table

At a glance pull-out plans sheet

Fold along this line

Folding instructions

Step 1. Pull centre section from magazine

Step 2. Fold this side in half horizontally

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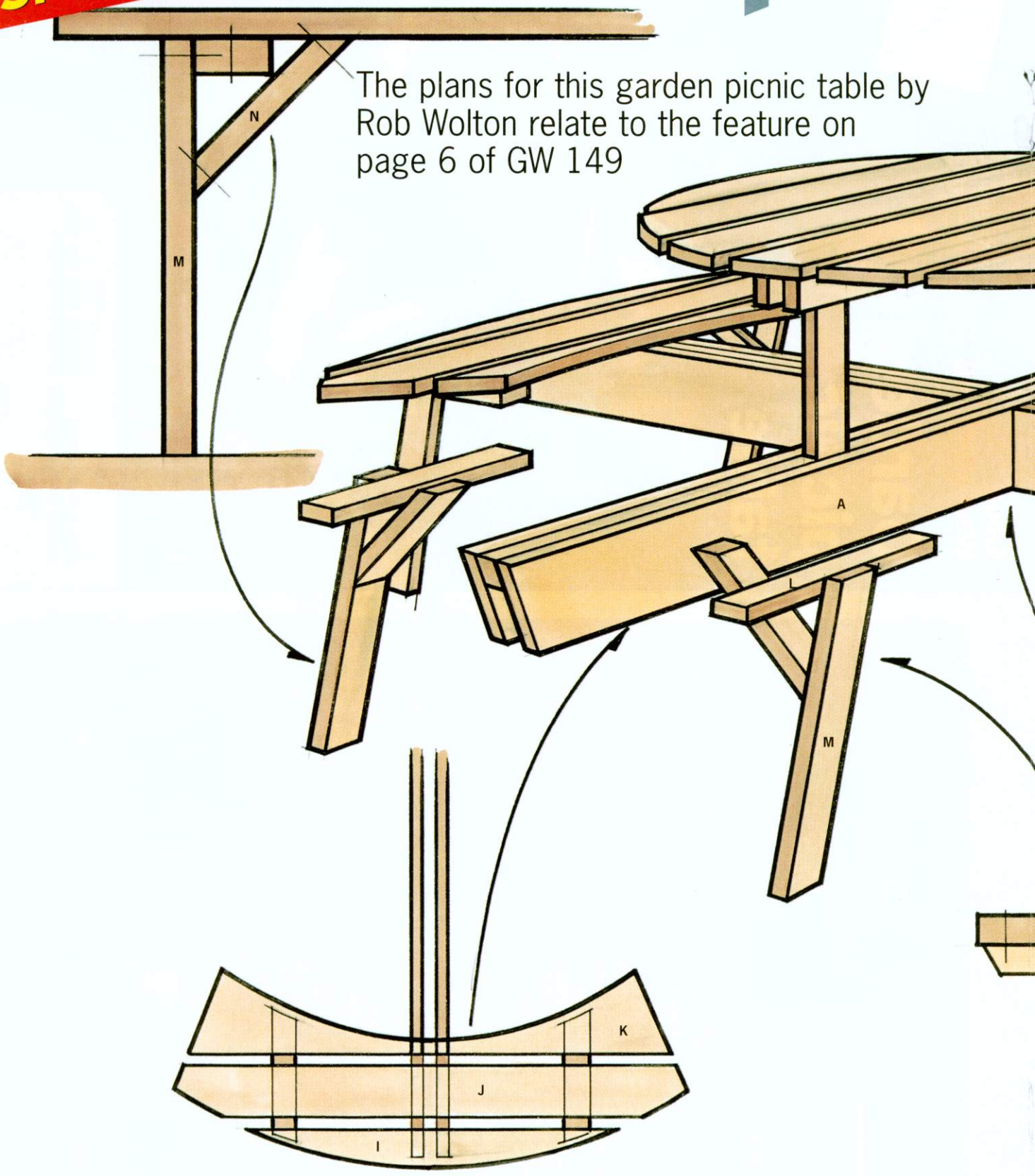
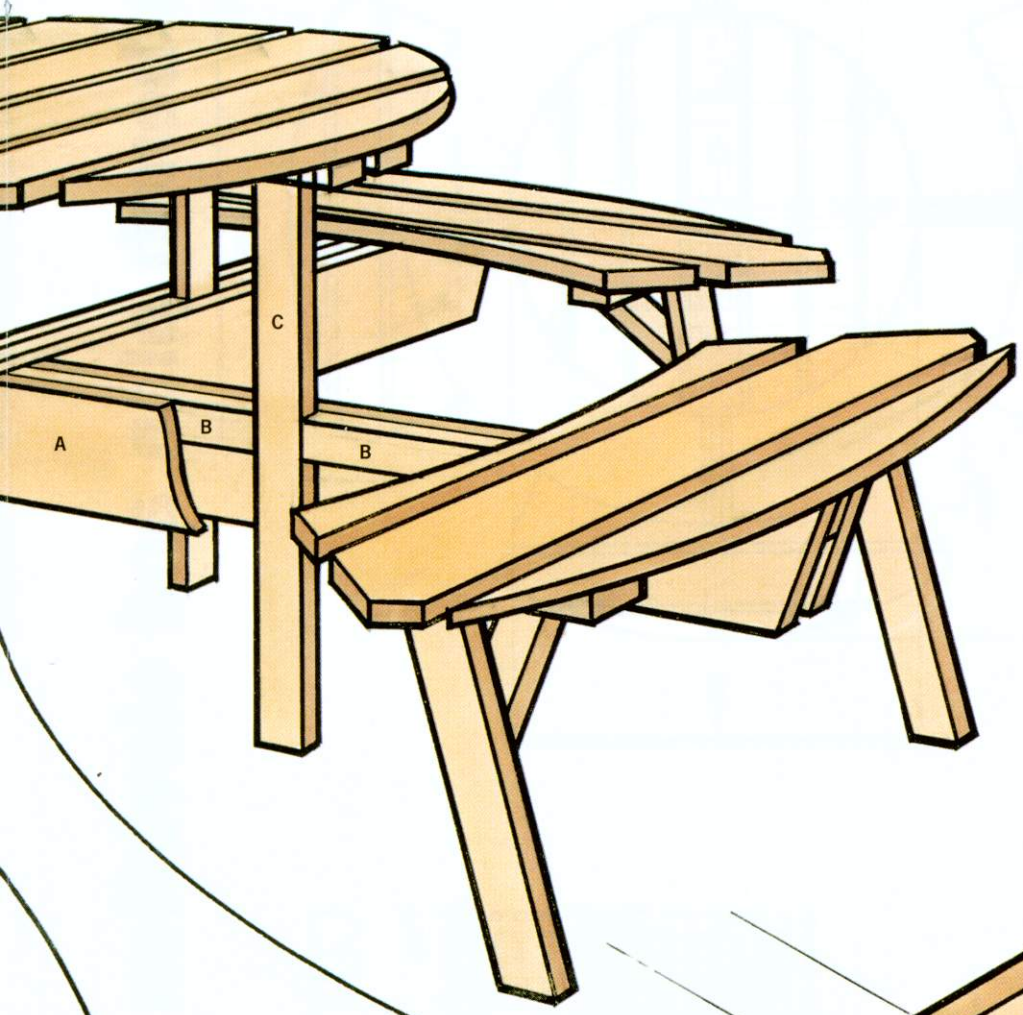
SUMMER SPECIAL

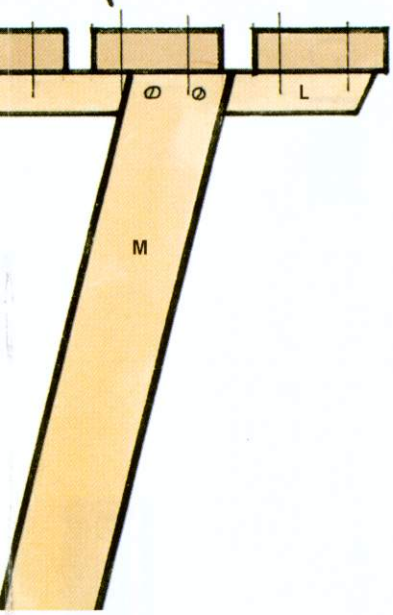
Garden picni

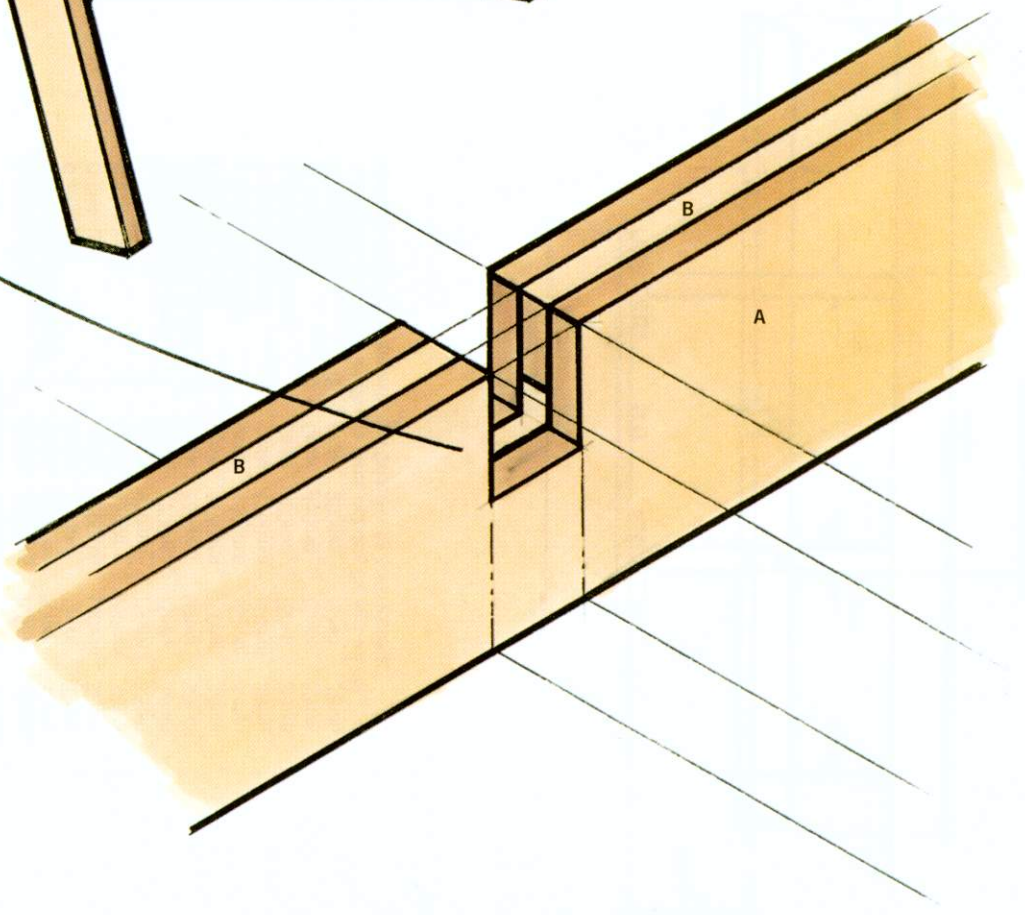
The plans for this garden picnic table by Rob Wolton relate to the feature on page 6 of GW 149



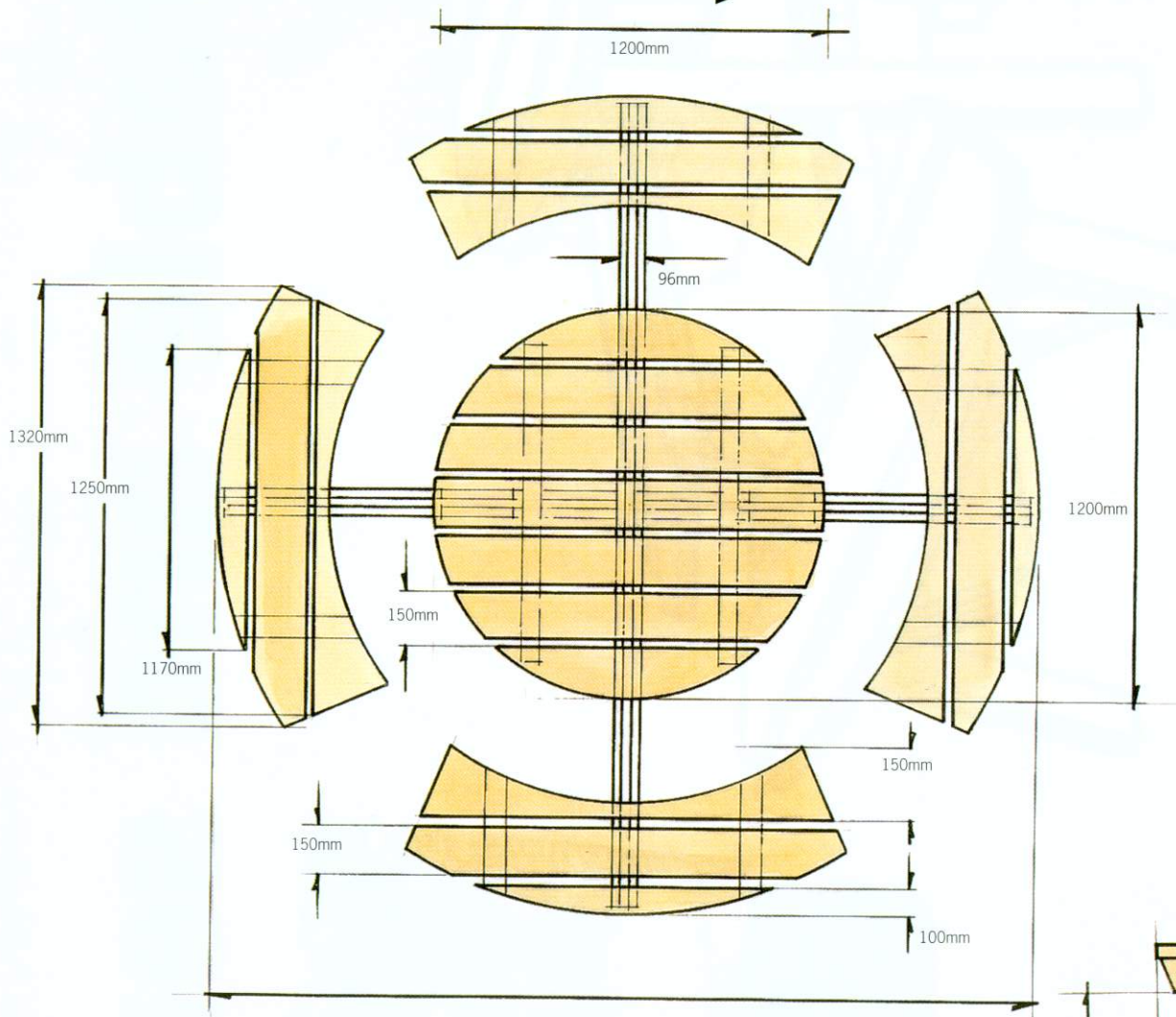
c table and seats







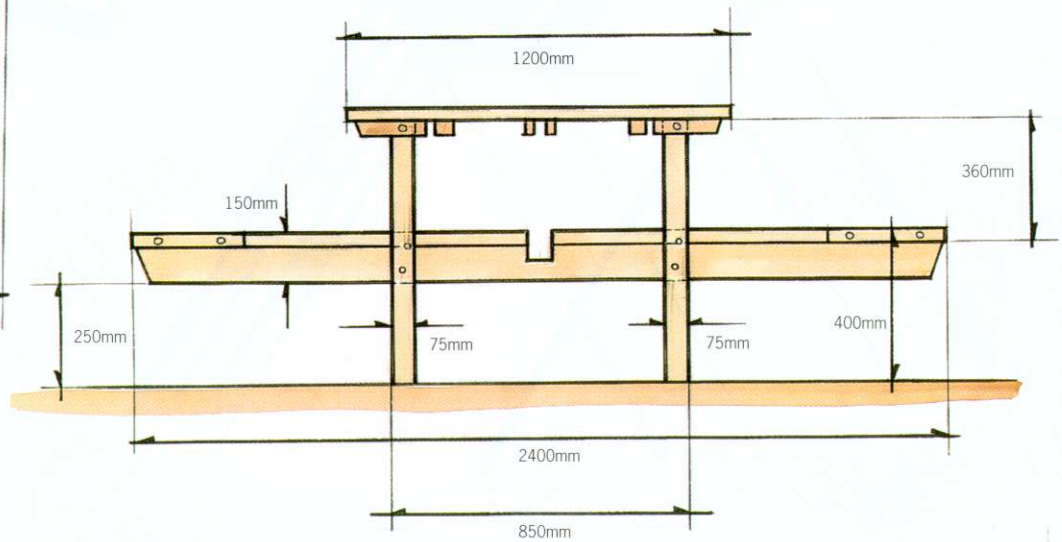
Garden bench plan and elevation



CUTTING LIST

Part	Qty	Mats	Length	Width	Thkns
A Main beams	4	Cedar	2400mm	150mm	32mm
B Main beam infills (total)	1	Cedar	4800mm	50mm	32mm
C Table legs	4	Cedar	710mm	75mm	32mm
D Table top	3	Cedar	1200mm	150mm	32mm
E Table top	2	Cedar	1140mm	150mm	32mm
F Table top	2	Cedar	850mm	150mm	32mm
G Table bearers (long)	2	Cedar	1200mm	75mm	32mm
H Table bearers (short)	8	Cedar	150mm	50mm	32mm
I Seat tops (outer)	4	Cedar	1170mm	100mm	32mm
J Seat tops (centre)	4	Cedar	1340mm	150mm	32mm
K Seat tops (inner)	4	Cedar	1250mm	150mm	32mm
L Outer seat bearers	8	Cedar	400mm	75mm	32mm
M Seat legs	8	Cedar	450mm	75mm	32mm
N Seat braces	8	Cedar	250mm	75mm	32mm

Cutting lists give the full length of a piece including the joint but not wastage. Add 5mm in the width and thickness for sawn material.



On Test

Special

Should you buy a combination planer or choose standalone machines? **ANDY KING** is judge and jury...

A significant difference between woodworking in Britain and America is the way timber is prepared. In smaller British workshops we tend to love our combination planer thicknessers. Standalone dedicated thicknessers are a relatively recent phenomenon outside the professional shop.

Cross the Atlantic and you'll find a separate jointer and thicknesser sitting in most workshops. No matter how large or small the outfit, there will be a narrow jointer or surface planer, plus a wider thicknesser. In many ways this makes sense, as it means there are two separate machines for preparing timber. You don't have to keep opening up the tables or removing the fence to change from one function to another.

American Woods

Part of this is due to both hardwoods and softwoods in America being readily available as prepared stock. Go into one of the massive Home Depot stores anywhere in the country and you're likely to come across fairly wide prepared boards of red oak, maple or poplar. Because surfaces and edges are supposedly planed flat and square, many American woodworkers would argue that you only need a 12in wide thicknesser.

Back in Britain, in professional joinery or furniture workshops separate jointers and thicknessers are almost mandatory. These are usually heavy, cast iron machines running off a three-phase supply. Exceptions are the massive, elderly Wadkin or similar combination machines you sometimes find in big workshops.

So which is the best system to choose? We take a closer look at the options and test some budget kit from Perform at the same time.

A small jointer such as the Perform is easy to use and ideal for planing small sections of timber

Flip-down tables incorporate end rollers to help timber pass through the thicknesser smoothly

Standalone jointer & thicknesser • Pros & cons

✔ Separate machines mean two people can work simultaneously, so improving machining efficiency.

✔ Jointer often has a longer bed than a combi planer thicknesser, better for truing up lengthy timber.

✔ In a cramped workshop these compact machines can be stored under a bench.

✔ Small machines are portable, so easy to move.

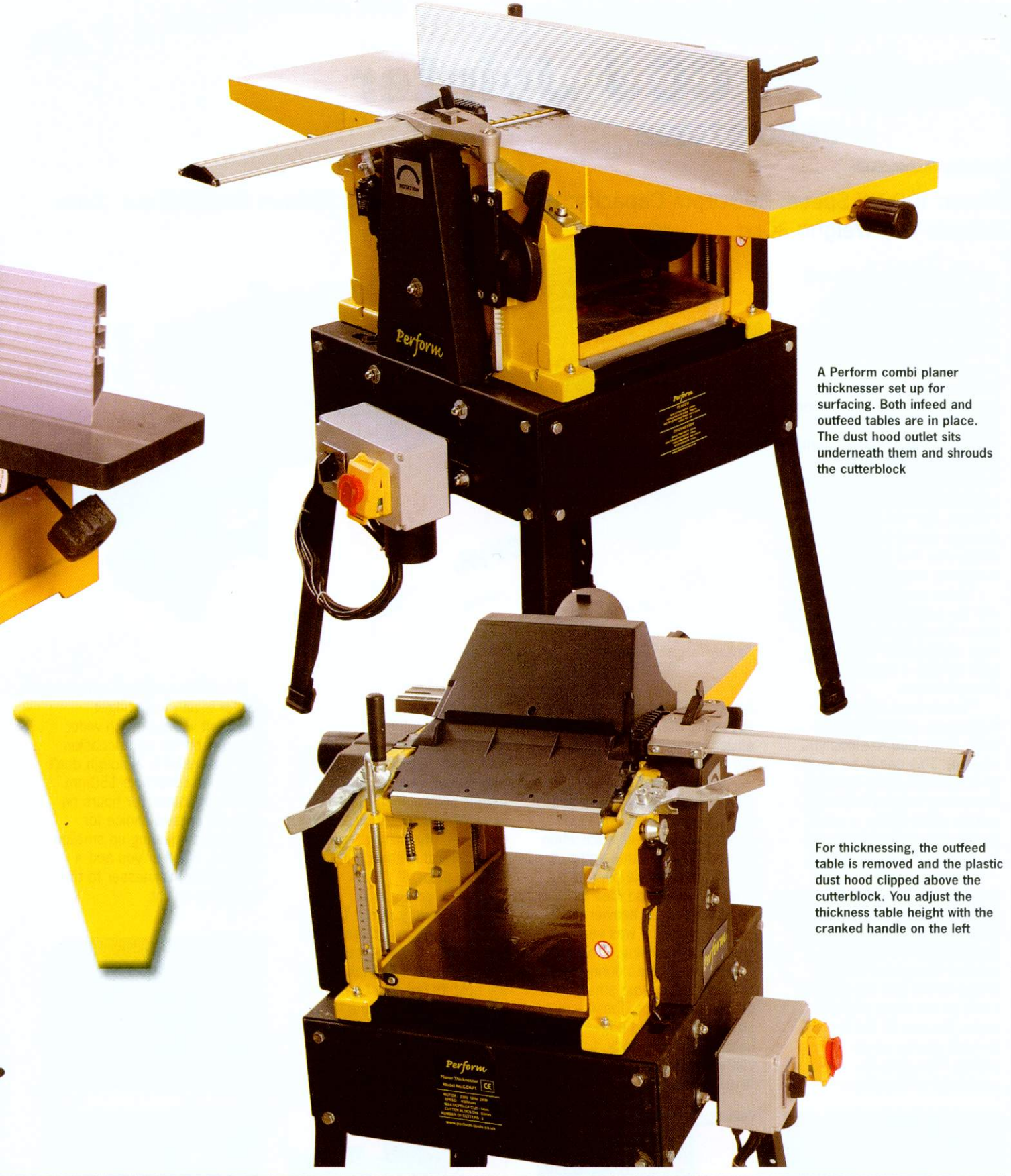
✔ Planer and thicknesser do not need to be bought together.

✘ Thicknesser may have insufficient infeed and outfeed table lengths to support heavy timbers adequately.

✘ Two machines means two waste outlets. You may need to move the extractor around.

✘ Jointer is likely to have a much narrower width capacity than a standalone thicknesser.

✘ Two set of knives to keep sharp, which also take longer to fit. More expensive if sent away for sharpening.



A Perform combi planer thicknesser set up for surfacing. Both infeed and outfeed tables are in place. The dust hood outlet sits underneath them and shrouds the cutterblock

For thicknessing, the outfeed table is removed and the plastic dust hood clipped above the cutterblock. You adjust the thickness table height with the cranked handle on the left

Combi planer thicknesser • Pros & cons

✔ Takes up less space than two separate machines.

✔ One motor instead of two, reducing initial overall cost and maintenance of machinery.

✔ Only one dust extraction hose needed.

✔ Only one set of knives to keep sharp, so less time and expense maintaining.

✔ Better overall timber capacities than standalones. Surface planing table typically 250mm wide.

✘ Takes time to change over from surfacing to thicknessing. On some smaller machines you'll need to open the tables.

✘ Not so easy to store or move around if space is tight in the workshop.

✘ Depth settings are lost once you change over the function, and must be reset if you want repeat dimensions.

✘ Some machines may need a 16A power supply to prevent fuse blowing at start-up.

Perform CCJ Jointer

£198.99 ☎ 0800 371822

www.axminster.co.uk

Motor: 1000W **Speed:** 8000rpm **Capacity:** 150mm **Table length:** 720mm **Depth of cut:** 2mm **Knives:** Two **Weight:** 20kg

With separate planer and thicknesser set-ups there's an anomaly when it comes to capacity. Whereas a thicknesser will generally cope with boards up to 300mm wide, a jointer generally is far narrower. Even professional machines are usually no more than 200mm in width across the cutters. Perform's entry level model has a maximum width capacity of 150mm. Not too restricting, although overall length of the tables may limit you to machining shorter timbers.

Tables are milled cast iron with the outfeed fixed. You adjust the infeed table with a large plastic knob below the table to take a maximum of 2mm per pass.

Planers tend to have a cutterblock shorter than the width of the bed to stops you rebating. This one is full width, so in theory it could be done. The casing prevent it though, and for extra safety, a small plastic peg on the infeed end prevents you attempting this.

You need a solid, stable fence for consistent results and the Perform's is pretty good. At 600x110mm, the extruded aluminium offers excellent support throughout the cut. Bristol levers lock the position it sits on the table, plus the angle. You can tilt the fence towards you for an acute setting. This gives the advantage of trapping the timber tightly so it won't slip as you make the cut, making it easier to control. A small flip-out stop enables it to tilt.

The base of the jointer is an ABS-type plastic with four bolt holes. I found the weight was enough to hold it in place when I put some shortish lengths of 150x50mm sapele over it, but it would be a good idea to fix it firmly for longer, heavier stock.

This machine was very stable when running. I felt in full control at all times during the cut, so I tried some small cherry mouldings. These had small chips on the edges that needed cleaning back. I clamped a featherboard to the fence to keep the work from kicking back and, more importantly, my fingers well away. Each one was passed across the cutters with superb results. On a bigger combination machine I wouldn't have entertained the thought of machining something this small, let alone actually doing it!

On the safety side, guarding is very good. The sliding aluminium bridge guard is held on a friction-type arm fitted to the outfeed table. This will hold its position on its own, or can be locked with a knob. Timber up to 100mm deep can be passed underneath.

If you work mainly smaller sections of timber, this little jointer is an ideal budget model. It will cope with wider material on the odd occasion you may need it, although don't expect it to machine 150mm wide oak boards for hours on end. It's a good choice for truing and squaring up smaller timbers, whether you add a standalone thicknesser to the workshop or not.

GW verdict

- ⊕ Cast beds, double tilt fence
- ⊖ Limited cutter width capacity

Value for money ●●●◐○
Performance ●●●◐○

Depth of cut is easy to set with a knob below the infeed table (above)

You can tilt the fence inwards for planing bevels (left). This grips the timber and is arguably safer than tilting it outwards

A flipstop on the back of the fence enables it to tilt either way (above)

The large extruded aluminium fence is locked solidly with Bristol levers (left)

Perform CC10T Thicknesser

£189.95 ☎ 0800 371822

www.axminster.co.uk

Motor: 1500W **Speed:** 8000rpm **Capacity:** 254x155mm **Feed speed:** 8m/min **Knives:** Two
Weight: 31kg **Bed:** 690mm

Despite being quite a basic machine, at just over half the price of its rivals, Perform's new thicknesser is certainly amazing value. It has a smaller width capacity than the 300mm common on most thicknessers. But with a maximum of 254mm, it's still more than enough for most planing tasks.

Thickness capacity is comparable, with a maximum of 155mm. It's adjusted with a cranked handle with the setting read against a metric/Imperial scale. A clear plastic cursor is adjustable for accurate setting.

The thicknesser lacks a headlocking bar to hold the setting firmly. Even with its 1500W motor, taking full depth 3mm cuts on hard timbers can result in an inferior finish, as the head can vibrate under the strain. This is minimised by taking lighter cuts.

Rubber feed rollers minimise pressure marks on timber. Cutter rotation to feed speed ratio equates to two cuts per millimetre. Although not as fine as some machines, this still leaves an acceptable finish. I had no complaints feeding through 150mm wide cherry and sapele boards.

On a machine capable of producing large quantities of chips, the 50mm outlet could be prone to clogging, although with it hooked up to our 100mm workshop extraction system it coped well enough. I like the idea of the flexible hose though, as you can easily remove it for storage. It can be clipped alongside the machine on its bracket or pulled across to an extractor during use.

Servicing appear to be straightforward, and the four corner posts and twin winding rods can be lubricated easily. For access to the cutterblock the head cover has to be removed using a hex wrench. The block is easy to work on, but I'd like to see a lock to stop it rotating.

There appears to be no safety micro-switching on the machine, although this isn't too much of a problem as long as the machine is unplugged while you work on it.

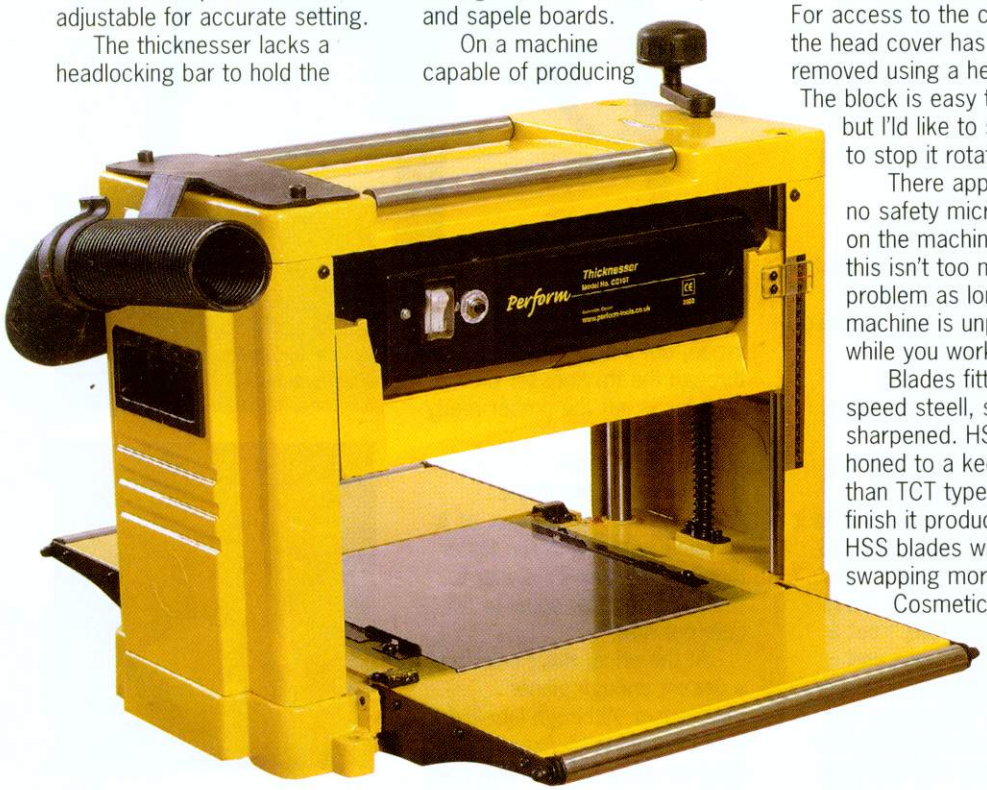
Blades fitted are high speed steell, so can be re-sharpened. HSS can be honed to a keener edge than TCT types, so the finish it produces is better. HSS blades will need swapping more often.

Cosmetically, finish of the machine was patchy. Component quality was pretty good, but certain parts appeared to have been in a car bodyshop! The flip-down tables looked as though they had a cursory flash over with a can of yellow paint, with some areas barely covered. This did not detract from the machine's performance, but it didn't look too impressive, either.

As this is a machine capable of machining big section timber, built in rollers on top are a great help, making it easy to pull work back over for the next pass.

Transportation is simple. The beds flip up and there are grips recessed into the sides of the machine. At 31kg, it's not too much of a struggle to lift, although I wouldn't carry it far.

For home or even occasional trade use, the Perform thicknesser is great value. It's basic, but does it's job well enough. On wild grain or very hard timber the lack of a headlock may affect finish, but finer skimming cuts are the answer. At under £200, it's well worth a closer look.

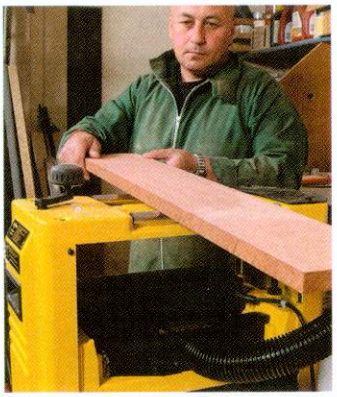


GW verdict

- ⊕ Decent capacities, great value
- ⊖ No headlock. Hose diameter

Value for money ●●●●○
Performance ●●●◐○

The flexible hose can be clipped out of the way of timber being machined



Rollers up above make it easy to pass boards back across the top

Access to the cutterblock is good. The cover attached to a chain

The winding mechanism has twin threaded rods, plus four corner posts

Perform CCNPT Combination

£399.50 ☎ 0800 371822

www.axminster.co.uk

Motor: 2200W **Speed:** 6500rpm **Capacity:** 260x160mm **Feed speed:** 3.5m/min
Table length: 1000mm **Depth of cut:** 3mm **Knives:** Two HSS **Weight:** 70kg

Perform's planer thicknesser probably hails from the same Far Eastern factory as many similar budget combi machines. It's built with safety very much in mind, with each function micro-switched. The extraction hood doubles up as the switch activator. If not in position, either under or over the cutters, it won't start. The front switch box also needs the selector knob set to either 'thickness' or 'surface' mode.

You need to do some assembly before it can be fired up. Legs need to be bolted on, and fence and tables fitted. Weighing 70kg, you'll probably need a hand. I certainly found it difficult to get out of the box!

Infeed and outfeed tables are cast, milled aluminium, but still 'in the raw' with no hardened surface you sometimes find on more expensive machines. They seemed flat and straight enough, but could be prone to oxidizing in damp conditions. A knob on the infeed drops table depth for cuts up to 3mm.

The alloy fence will tilt to 45°, locking across the table and at any angle with Bristol levers. Our test model had a problem with one of these as the splines weren't gripping so it wouldn't tighten. A bit of tape as packing sorted it out, but of course, this is an example of where budget models often use cheaper components.

Quality of the fence and bracket assembly, along with the bridge guard is decent enough. The fence is rigid and flat, so no problems there. I like the rack and pinion-type lever adjustment for the bridge guard as it's easy to set and holds the position without slipping.

I'm not a big fan of removing tables to change functions. Outfeed table and fence assembly need to be removed for thicknessing on the Perform. Although quick and simple, with cam and Bristol levers to help, I find it annoying having to store the components somewhere.

It can be frustrating when thicknessing to find you've overlooked a component at the surfacing stage. You have to alter everything, which can make it difficult to replicate a previous setting.

On the plus side, a removable table does give good access both to the cast iron thicknessing bed when working in that mode, and also to the cutterblock for maintenance. Tools are provided for cutter changing. Knives are twin-edged disposable HSS (£12.48 per pair replacement) so the process is quick and easy. As it can hold a keener edge, HSS tends to leave a cleaner finish, especially on pine, and these do a pretty good job. I put a variety of pine, sapele and cherry boards over and under the machine. The cherry was where I expected a rough ride as it was pretty wild and hard, but it came out pretty well. It was a bit more difficult to get a consistent finish in surfacing mode, but a final pass through the thicknesser on both faces left the timber ready for a final sand.

The feed speed of 3.5m per minute quoted in the manual seems rather low, as it certainly appears to run faster than that. I'd say it's closer to 6.5m per minute, equal to two cuts per mm.

At the price, this Perform is a decent enough planer thicknesser. Although labelled a hobby machine by Axminster, used sensibly, (not running it all day long) it would benefit many a small workshops.

GW verdict

- ⊕ Decent planing capacities
- ⊖ Changing functions can be a pain

Value for money ●●●●○
Performance ●●●◐○

The dust hood or table must be in place for the micro-switch to work

You adjust the bridge guard with a rack and pinion-action lever

The Bristol lever on the fence needed some attention!

For safety you need to select the function on the NVR switch box

A cranked handle is used to adjust the thicknessing depth

How to plane a face side and edge

No matter if you're planing timber up by hand or machine, the sequence is the same.

Sight down the board to check for bowing. Select a suitable face side and edge and identify these by marking them with a pencil.

Plane the concave side first, working with the grain to avoid tearout. Start with both hands behind the bridge guard if using a surface planer.

If using a bench plane, a pair of winding sticks will reveal any twist in the board. These are narrow, parallel strips of wood, placed at either end of the workpiece. Squat down so that you can line up the two top edges by sight. If the back edge is not dead parallel with the front edge, the board is twisted.

Once the face side is flat and true, plane the face edge. This is done with the face side held flat against the planer fence, which should be dead square with the tables.

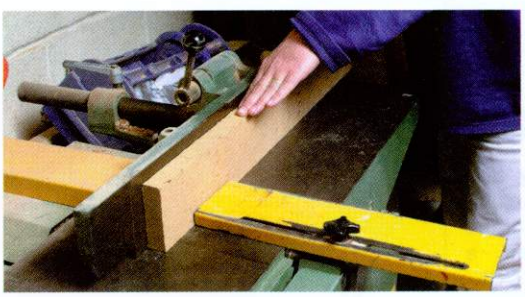
If planing by hand, keep checking the edge with the try square. Then you can plane the board to width and thickness.

Use either of these marks to identify face side and face edge

1. Check the fence is square to the surfacing tables. Make sure your square is accurate, though

2. Plane the concave face first, working with the grain to avoid tearout. Start with both hands behind the guard

3. Transfer left hand to the front to keep wood firmly down on the outfeed. Don't pass hands over the cutters



4. Close up the guard to leave no gap. Keep firm pressure down on the table and into the fence at all times

On Rojek's MSP 310M planer thicknesser (tested in GW 140) there's a choice of fixed or flip-up tables

FINAL VERDICT • Standalones or combination planer?

So which is the better option? Each system has its pros and cons. Give plenty of thought to the type of work you intend doing, available workshop space and what your future needs may be. You may find that a system that serves well initially could become restricting as you progress to more complex or bigger projects, but your workspace may dictate to some extent what you choose.

Although a jointer's width capacity may limit you, it's easy enough to joint up boards for wider panels if necessary. This method tends to be more stable than a wide, single piece of timber anyway.

On professional jointers, longer beds are a distinct advantage for straightening timber. But the smaller hobby model from Perform, despite its cast iron beds, will limit you, especially with heavier work. Long, lightweight wood is manageable though, so if you build frame and panel type furniture, this could be all you need, combined with a suitable standalone thicknesser.

Of course, portability is a major factor in plumping for a separate jointer and thicknesser. Not only do you have the benefit of two compact machines that can stay set up, but they can be stowed away in seconds, You can also chuck them in the back of a car and use them on site if necessary.

Combination planer thicknessers require a more methodical approach to working. While they're good all rounders, most smaller machines have to be altered in some way to change from one function to the other. Unless you're happy to spend a lot more money on an industrial machine, of course. It can be frustrating enough if you forget to square up a component when thicknessing. But on the odd occasion when a component needs to be re-made and the faff of swapping from one to the other is very annoying! That aside, the combi's strength is its all round capacity. More than enough for most jobs, without needing to glue up boards to make up wider panels.

As I tend to work regularly with larger joinery timber, a combination planer is the better choice for me. Despite my misgivings about change over from surfacing to thicknessing and back again... But if working in a professional shop with enough space for a jointer and thicknesser, then standalone machines would be well worth considering. especially if a wider, long-bed jointer was feasible.

But even the hinged beds of some pro machines result in settings being lost and extra time needed between modes. There are combination planer thicknessers where the tables stay put (such as Sedgwick), but these are not cheap. Their advantage is thatyou can thickness and surface without altering settings.

NEXT MONTH:
Bandsaw Guide

How to choose the best bandsaw for your workshop and budget. Don't miss it!

beadLOCK®

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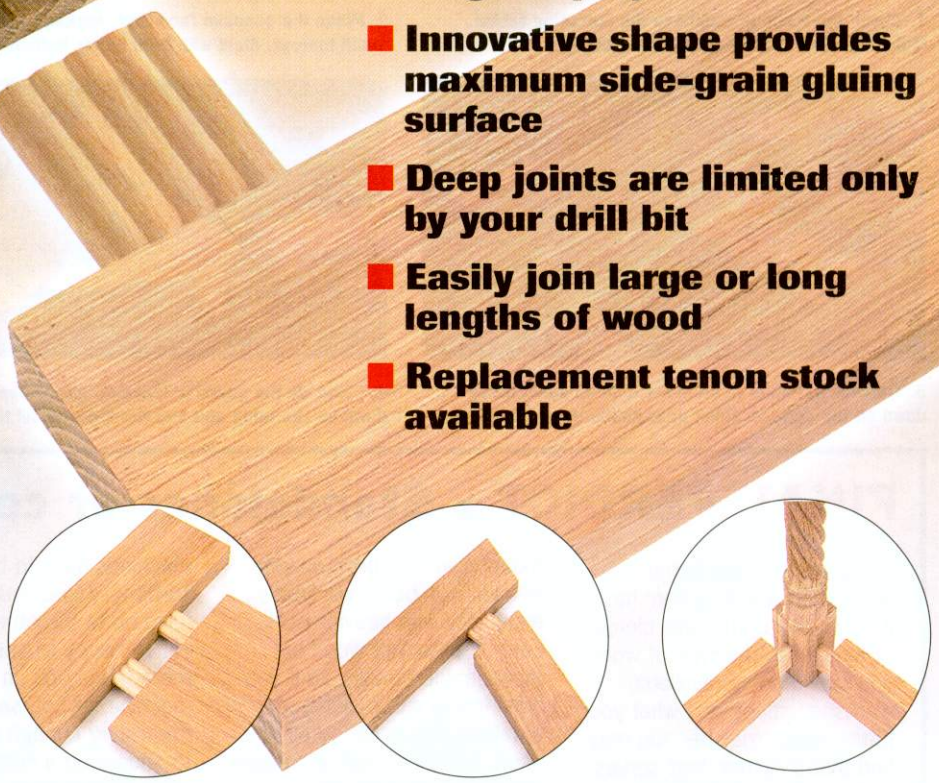

HOW IT WORKS

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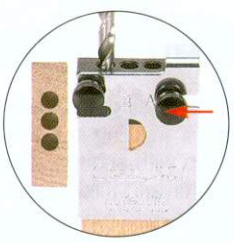
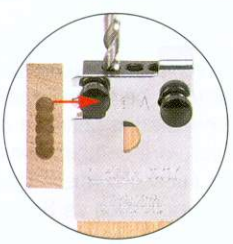
1.



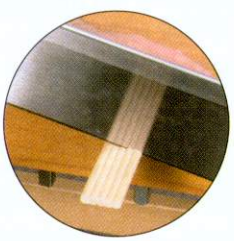
Clamp jig to timber with an 'F' clamp or in a vice with the block in position 'A'. Drill holes to desired depth.

2.



Slide guide block to position 'B' & drill remaining overlapping holes. Repeat on the other component.

3.



Cut length of tenon dowel 1/8" shorter than the total mortise depth and glue the workpieces together.

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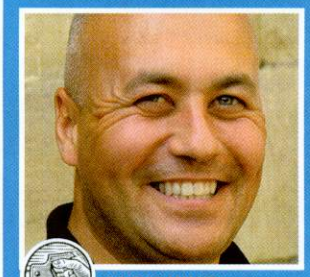
AD/04/08

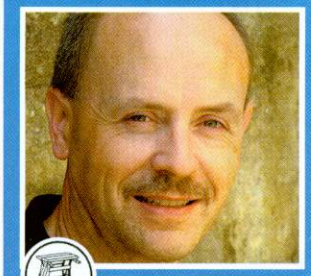
Answers

Our experts answer questions on choosing table saws and the thorny problem of using dado heads

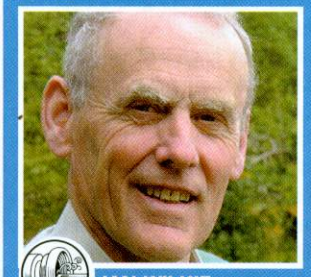
Ask the Good Woodworking expert team



ANDY KING
Techniques



PHIL DAVY
Supplies



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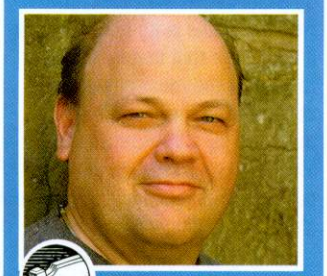
Woodturning



PETE MARTIN
Furnituremaking

PLUS: Our other specialists in every woodworking field from timber to finishing are available to answer your queries as required

Full extension

In GW 148's Workshop Guide it says that the full extension drawer runners can be got at B&Q. I have been to two stores and could not get them. I also tried the website. Could you ask Ian Dalziel where he got them?

Pat Dunne, via email.

Ian says you'll need to go to a B&Q Warehouse rather than the ordinary smaller B&Q stores for these Pat, though you could try Isaac Lord (www.isaaclord.co.uk) who also sell them.

Pete Martin

Great British dado

I was watching *The Great British Woodshop* presented by David Free and he was using a dado cutter in his table saw. He then went on to explain that he had checked all the regulations and was assured there was nothing to stop him using this. The saw he was using did have a decent length of shaft to allow to use the cutters. I shall be interested to read your comments on this.

Alan King, West Yorks

The use of a dado head in a table saw probably provokes the most discussions both amongst the GW team and with readers. The saw that David Free uses is the UniSaw, imported from America. In theory, there is no reason why you cannot import such a saw yourself, and use it in your own home. It is when such machines are bought in by dealers and sold on that the law becomes stricter.

The current UK legislation for table saws is that they should all have an arbor shortened so that only a sawblade can be fitted. Likewise, they should all have a crown guard facility and a riving knife. Also, the motor has to be braked so that the blade will come to a halt in less than ten seconds. In industry, any firm flouting HSE regulations is liable to prosecution and can be closed down till proper safety precautions are enforced.

In your own home, you can basically do what you like, as it is at your own risk. This means you can remove guarding if you wish, and if you can get hold of a saw by either directly importing it or purchasing a saw that is no longer within current regulations for industry, and you can fit a dado head if the arbor is long enough,.

In theory, David is right what he says regarding his saw, providing it is used within these parameters. There is a grey area whereby a home user who maybe knocks out a few bits and pieces to sell to friends or at car boot sales then becomes a worker earning money through the machine, and therefore could fall within the remit of HSE regulations and fall foul of the legislation should HSE decide to prosecute.

Lifting routers

I was interested to read the review of the Woodpecker UniLift in GW146. Comparing this to similar products on the market it appeared extremely well made, good value and supported by an excellent website (www.woodpeck.com). I found it on the net for $289 (£166), which is the same price as the Axminster RoutaLift, cheaper than the Bench Dog at $369 (£225) and the only cheaper product was the Rout-R-Lift Jessem Lift1 at $200 (£115). I was therefore surprised that the UniLift rated only 3.5 stars for value and 4 for performance.

Have you had the opportunity to compare them directly or do you have any opinions on relative merits. How do you rate the Rout-R-Lift? Bearing in mind the additional cost of assembling the table into a bench with suitable fence etc, would you recommend a complete bench system in preference? Alternatively do you prefer a system such as the Woodrat?

Robbie Neilson, Harrogate.

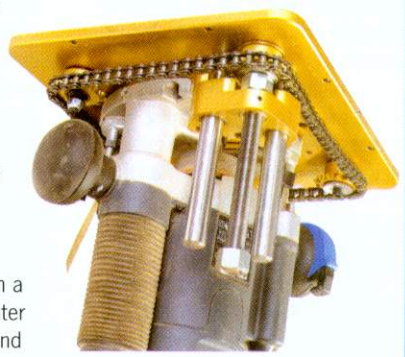
We've had no chance to compare the Axminster Routalift directly with the Unilift but reckon that the latter is probably the better mechanism now, predominantly because it reduces a router's plunge capacity slightly less and is easier to operate because of the two adjustment systems. It also lifts on two posts rather than one, making it more smooth in its adjustment. The Routalift had a higher mark in standalone tests but this reflects more its uniqueness at the time of testing. It would certainly be interesting to test all the lifts available, which we might do at some point.

We've not tested the RoutRLift, mainly because of difficulties in getting our hands on one from Rutlands, the distributors. However, as far as we can see, it is identical to the RoutaLift.

As far as comparing with router table systems, it's more a case of finding one that is a easy to use as these lift mechanisms. Our preference would be to build our own from a router compatible with the Router Raiser (which is very smooth and loses virtually no plunge), then fit this to a dedicated plate and build the lot into a homemade table, with perhaps a Trend or Axminster fence. You can overcome the loss of plunge by fitting an Xtreme Xtension (tested at the same time as the Unilift. It's not so much a case of price more the end result obtained. Most dedicated tables have their weakness, which can be overcome by building your own.

Despite the manufacturers claims, it's unlikely that the Woodrat will ever really replace the allround versatility of a conventional router table for basic routing processes, being far better for cutting joints than routing long lengths of timber.

Pete Martin



Delving into detail

Decoration by router by Jeff Gorman

So that their edges can be fitted into grooves formed on the insides of the stiles and rails, the perimeters of door and other panels are often 'fielded' to reduce their thickness. Making a virtue of this necessity, the fielding is frequently done so that there is a definite step that defines the border of the panel. In this prototype box, I experimented by fielding its sides and breaking the surface with a series of routered channels. (The wood came from the trunk of a kindly-donated ornamental cherry tree of unknown name and rather featureless grain). Consider that this enhancement might also be suitable for drawer fronts and some door panels, though there would be little point in using highly figured woods.

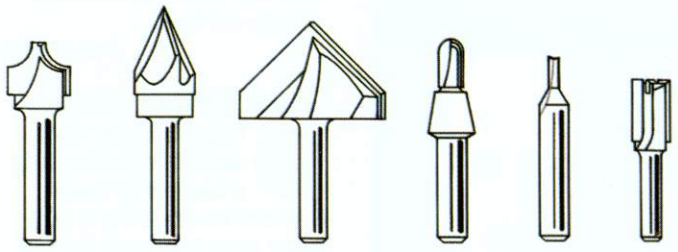
Design Options

The tools create numerous highlights and shadows whose impact will be varied by the groove widths and depths. I've illustrated a collection of suitable cutters, chiefly selected from a manufacturer's miniature range. Considering some of the possibilities 'Keep it simple' might be your motto. Design options might include:

- Varying the spacing between cuts. Cuts made closely together will produce a different texture from those spaced further apart.
- Varying the depth of cuts. You could; for example, make longitudinal cuts deeper than transverse cuts.
- Choosing one cutter profile for one cut and a different one for the other.
- Filling rectangular grooves with contrasting inlay material.

Hints for Making

- Before getting too involved, check that your available material will cleanly cut with the cutters you intend to use. I think that a fine-grained hardwood would be most suitable. Since they would interfere with the definition of the sharp corners (arrises), avoid wood that shows coarse and prominent vessels.
- Plunge routers mounted on a router table can be tricky to adjust. Life might be easier if you make yourself a few depth gauges. Time and material spent on trial pieces will be well-rewarded.
- You will need a good sliding fence as well as the long fence. When working on a completed box, extending the height of the fences should offer greater security. Take up any free sideways movement of the sliding fence by adding a consistent sideways force to the forward movement. Since friction could cause the work to judder as it moves, it will be unwise to use the long fence as a length stop. To make a stop, cramp a batten some distance behind the intended movement's start point.



To get accurately repeated spacing, consider incorporating a set of loose packing strips/blocks between the end of the stop and the workpiece. Ensure that the workpiece size is appropriate to the router table dimensions.

- A metal shoulder plane will probably be a great help in removing any machining marks from the fielding.
- No glasspapering please! None whatsoever! I don't belong to the no-glasspaper lobby, but in this situation you would be almost guaranteed to spoil the arrises that do so much to give the job its visual appeal.
- If all has gone well, a final skim with a finely-set smoothing plane should remove any frayed fibres and sharpen the arrises.
- A wax or Danish Oil finish might be most suitable. Fluid finishes could flood the channels and be unlikely to hold on the arrises.

I recently attended a WMSA seminar (Woodworking Machinery Suppliers Association) that dealt with current HSE regulations, PUWER 98 (Provision and Use of Work Equipment Regulations) ACoP (Approved Codes of Practice) and risk assessment and what it means to the industry. This covered all aspects of the current legislation, with a fair bit aimed at the safe use of woodworking machinery.

I contacted both lecturers at the seminar to get a defining answer to your question. Keith Dobson, who used to be the HSE WOODNIG Leader (Woodworking National interest Group) gave me his own interpretation:

"It's important to note that the Health and Safety Law in all its forms takes precedent over British Standards, unlike some countries where the standard is enshrined in the law. The specific legal duty in this case is the Provision and Use of Work Equipment Regulations 1998 and the accompanying Approved Code of Practice on Woodworking (ACoP).

"The law applies to employers, employees and the self employed. It does not apply to DIY unless this is undertaken for gain, ie, as a business venture. However the Local Authority Standards Officers do have a direct interest in what is sold in shops and may have a view. To date I am not aware of them taking a stance on the sale of woodworking machines for private use in terms of applying the new legal requirements that apply to employers etc.

"In so far as tooling for woodworking machines is concerned, Regulation 4 is the most relevant since it deals with the suitability of work equipment. The ACoP says that only suitable tooling should be used on woodworking machines and then goes on to say that on hand fed machines limited cutter tooling, or other devices that achieve the same effect, should be used where possible. The ACoP specifically says that it is possible to fit such LCPT (Limited Cutter Projection Tooling) tooling on vertical spindle moulding machines, single end tenoning machines and some rotary knife and copying lathes.

"Straightforward circular saw blades are not specifically covered by this requirement but it is a matter of legal opinion whether a dado head is a moulding tool or a saw. To a large extent the tooling industry is deciding what tools can be produced in the LCPT form. HSE have said in its guidance that if you use a tool that is designed for one of the machines listed above on another hand fed machine, ie, a Vertical Spindle Moulder type moulding tool on a pull-over crosscut saw then the tool should be of the LCPT type.

"Manufacturers and suppliers have legal duties relating to the health and safety of their machines and equipment. For machines the Supply of Machinery (Safety) Regulations 1992 applies There is a raft of British Standards on woodworking machines but these are not mandatory. A supplier can use compliance with a standard as a means of declaring compliance with these Regulations but can use another route.

"Supply regulations do not apply to separate tooling unless

the tool is mounted in the machine at the point of sale, eg, a surface planing machine. For tooling there is a legal requirement governing the supply of any article which says that such an article must, so far as is reasonable practicable, be safe when properly used. This requirement is not used by the HSE very much these days. The tooling standard to which you refer, namely BS EN 847-1 (and 2 and 3) is not mandatory in legal terms but used as guidance and in the main followed as the state of the art. The standard does not specifically deal with dado heads."

Tony Kaye, the other lecturer on the seminar, confirmed a couple of points, as follows:

"To my knowledge there is no specific regulation or requirement prohibiting the use of a dado head in a conventional circular saw bench. A suitable moulding cutter head or dado head can be used providing the head is securely retained and an appropriate gap plate is used, along with of course, effective guarding. EN 1870-1 indicates an arbor length of 15.5mm for new saw benches. There was talk of increasing the length to 20mm but I believe this proposal has been withdrawn.

"The use of a fixed or adjustable width dado or grooving cutter head is better on a spindle moulder – but there is no legal reason why such a tool cannot be used on a saw bench. Providing the retaining method on the saw spindle is secure, the gap plate changed accordingly, and a Shaw type or tunnel guard is used to hold the workpiece firmly to table and fence, in the hands of a competent operator grooving on a saw bench is possible."

My own interpretation of all this is that any new product should not be able to have a dado fitted because of the legislation regarding short spindle arbors. Older machines that comply with all other regulations such as braking and guarding are allowed to use the dado, but again, this has to comply with current chip limiter cutters, so the multi-bladed stack type may not comply.

The implication from the seminar is that the onus is on the end user to risk-assess the situation, and if there are better alternatives, that option should be explored (rebates are safer cut with a router or spindle moulder rather than a table saw. as an example). If it is proven by the HSE that there has been negligence, whether due to the removal of guarding, inappropriate tooling, or using machinery beyond it's designed use, then a prosecution is an option.

Andy King

Which saw?

I have just built a 20x10 ft workshop and am currently looking for a sawbench. It has to be easy to remove the side table and sliding carriage because of the space. Power is limited to 240v, max 16A. The saws I would like your advice on are the Scheppach TS2000, the Jet Supersaw JTS 250S, Festool CS70EB and the Axminster s80.

M. Fletcher, Mansfield

The Festool was a tricky model to track down and isn't one I am aware of. I eventually found reference to it on the internet. It looks a very upmarket sitesaw, so predominantly aimed at the shop fitter looking to make both big cuts while still incorporating very accurate facilities for mitre work. On top of its obvious build quality and accuracy, its portability is a main factor, so it may not be the best choice for the workshop, especially if you envisage a lot of raw timber conversion rather than sheet material work.

The Axminster model is again one I haven't tested, but it looks a decent machine with good specs. The 250mm blade is ideal for converting 50mm stock and will also cut 75mm, although if I were using this size timber regularly I would be inclined to move up to a saw with a 300mm diameter. Usually the sliding carriages on this type of saw slides off easily, with a couple of small stops to restrict the overall travel are all that keep it in position. The right hand table is a different matter. This looks like it slides into a channel, so although it will slide out easily, the rails it slides into still extend to the right so need the same amount of space.

The Scheppach is the one model here that is designed for small spaces. The carriage unclips in seconds, and the right hand table is available in either a fixed position – or if space is tight, a drop down version is available. As this only has a 200mm diameter blade its capacities are limited. It will cut 50mm stock at 90° but, as with the 10in Axminster, if you are going to use it mostly for this, a bigger saw is a better option. Apart from its compact storage option, what makes it such a good machine is the micro adjustments for both the ripping fence and the blade height. Very accurate work can be achieved on this saw with minimum fuss.

Jet's Supersaw is a personal favourite. If I had a choice of cast iron over aluminium when it comes to saw tables then the cast would win every time. This saw suffers the same problem as the Axminster though; the right hand projection of the fence rails means that even if the table was removed, the width needed for storage would still be about 1600mm. I do like the fact that the carriage is built in, though. This will limit the travel, but keeps the overall depth needed to a minimum, and it slides beautifully. The quality of the Jet is superb. Despite its Taiwanese origin, it is excellently finished with flat tables and silky smooth adjustments for both the blade and fence.

Andy King

YOUR QUESTION

FOR THE GOOD WOODWORKING EXPERTS

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How do you overcome that sticky problem holding up your latest project? What is the best way to tackle that new job you're planning? Ask the *Good Woodworking* experts – they're here to help readers with tips, hints and advice. Jot down your question or problem on this form and send it to us. We'll do our best to contact you with advice as soon as possible and print the answer, which will help thousands of other woodworkers too. If you cannot fit your question on the form, please send an extra sheet.

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Fill out your question then send this form, or a copy of it, to our team of experts at:
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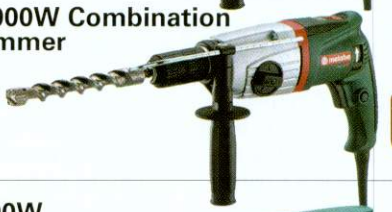
BHE 26 750W-SDS
Rotary Hammer

CODE!

KHE 26 800W
Combination
rotary hammer

CODE!

KHE 28 1000W Combination
rotary hammer



CODE!

KHE 32 900W
Combination hammer

CODE!

UHE 28 1010W
Combination
rotary hammer

CODE!

SBE 1010 PLUS
Impact drill

CODE!

KHE 28 CODE!
ON TEST
IN ISSUE 148
"ABOVE EXCELLENT PERFORMANCE"

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The CODE! key is an electronic key which can be used to enable / disable Metabo electric power tools featuring the CODE! anti-theft protection system.
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ask your dealer for a demonstration or go to www.metabo.co.uk

News from the wood

Pete Martin brings you all the latest news, products and gossip from the world of woodworking

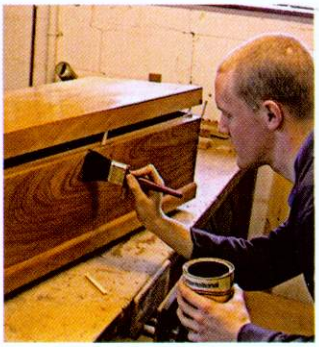
New school for furniture and woodworking

A new School of Furniture and Woodworking is being opened by the International Boatbuilding Training College (IBTC) for students who want to take up professional careers as furniture makers and restorers.

Based at Oulton Broad in Suffolk, students on the course will share the facilities and resources currently enjoyed by the college's boatbuilding students, but will benefit from their own dedicated training workshop and full-time tutors.

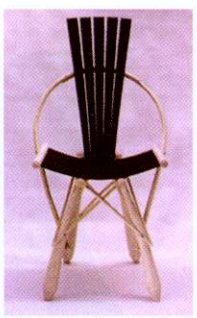
The IBTC will complement and extend the scope of their existing award-winning joinery course which has been running since 1975. The new course will cover all the specialist skills needed by those who want to achieve the highest standards in furniture making and restoration. It will also feature aspects of boatbuilding as an option.

Chairman of the new school, Mark Elliot, commented: "The IBTC's students are renowned for the quality of their workmanship and I confidently expect the new School of Furniture and Woodworking to attain a similar reputation."



For full details of the course, contact Myra Perring on ☎ 01502 569663.

West Country craft show



Show exhibits include superb work from Cameron and Talbot (far left) and Guy Martin (left)

Bovey Tracey may not be the first name you think about when considering premier craft shows, but that might be about to change. Crafts at Bovey Tracey is a new weekend craft show to be held over the weekend of June 12-13, bringing together a variety of craft makers and applied artists in the West Country.

The work on show will generally be of a very high quality and features a number of furniture makers and sculptors from the world of wood-based design and craft.

Notable names from the furniture makers include Cameron and Talbot, Guy Martin, Conrad Smith and Nichola White. Alongside the displays there will also be demonstrations, talks and a children's craft areas to keep the little ones amused.

Tickets are £5 for the weekend for an adult, concessions £3 and children under 14 free. To book tickets ☎ 01626 832223 or visit www.craftsatboveytracey.co.uk for further information.

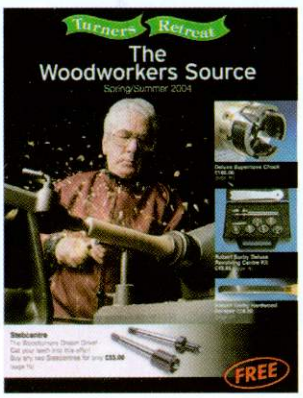
All the latest from Turners Retreat

Turners Retreat has launched a new free Spring/Summer full-colour 80-page catalogue featuring over 2000 items for the woodworker, woodturner and carver.

Among the new lines included in the catalogue are: a new Robert Sorby range of tools; metal leaf decoration kits; stebcentres; project accessories; microplanes; intarsia; glue guns; safety equipment; Japanese pull saws; and books and videos.

The Spring/Summer catalogue is available free of charge from Turners Retreat, Brunel Close, Harworth, Nottinghamshire DN11 8QA, ☎ 01302 744344.

Alternatively you can visit their website at www.turners-retreat.co.uk.



Two new BriMarc catalogues

BriMarc are launching two new catalogues for 2004, their Spring/Summer and Autumn/Winter editions, featuring all of their new products from Miller Dowel, New Yankee Workshop, Veritas and Proxxon.

In addition, one of BriMarc's most popular products, The Leigh Dovetail Jig, is now supported by its own catalogue, providing detailed information as to how to get the most of the product.

To order a BriMarc catalogue ☎ 0845 330 9100 or visit www.brimarc.com.

A new angle from Trend

Trend has launched a new Industrial Tooling range including sawblades, spindle tooling, drilling tools and CNC routing tools which it describes as having been "developed to meet the demands of modern industry."

Trend added: "Trend offer a range of spindle tooling to meet the requirements of the modern woodworker. This includes multi profilers with tool steel, tungsten carbide knives, tungsten carbide brazed tip tooling on disposable insert tooling The most popular range of cutter heads is available from stock in 30mm or 1¼in bores as standard. Trend also offers some of their 40mm knives in tungsten carbide from stock."

For further information concerning the Industrial Tooling range, contact Trend on ☎ 0800 487363, www.trendmachinery.co.uk.

Battery adaptor

You know how annoying it is when batteries are the wrong size for the tool that you want to use. Well one solution could be the clever Battery Adaptor from Spectra Tools. Basically it's a series of sleeves that fit around smaller batteries so that they can be used where a larger battery is required. So an AAA converts to an AA, an AA to a C/D and a C to a D.

Costing £2.99 for a pack of two sets of convertors, this is a neat idea that could see you out of a problematic spot. For more information see www.spectratools.co.uk.

CD storage solution

Good Woodworking receives a fair number of requests for details of stockists of CD, DVD, video and mini-disc racking that can fit inside cabinets and store these ever more popular products. Well now help is at hand.

XPI has released their cannily entitled *Media Storage Fittings Mail Order Catalogue* featuring all manner of inserts, racking, turntables and drawer trays. Order your catalogue seven days a week on ☎ 01302 856556.

Diary dates

NEWS, events, exhibitions, shows and courses for the woodworker

In association with trend® routing technology

PETER CHILDS TURNING DEMONSTRATIONS
June 5
Derek Philips
June 19
Tony Witham
July 3
Derek Philips
July 17
Tony Witham
August 5
Derek Philips
The Old Hyde, Little Yeldham, Halstead, Essex
☎ 01787 237291

JOHN BODDY'S DEMONSTRATIONS
June 5
Woodturning – Andy Lodge
June 12
Gilding – Pamela Keeton
June 19
Woodturning – Marsden Howitt
John Boddy's Fine Wood & Tool Store, Riverside Sawmills, Broughbridge, North Yorks
☎ 01423 322370

WIZARDRY IN WOOD THE MAGIC OF THE WOODTURNER'S CRAFT
Tuesday 15 June
Demonstrations and exhibitions of the finest in British woodturning to celebrate the 400th anniversary of the Worshipful Company of Turner's Royal Charter, plus the first chance to see Leonardo da Vinci's original lathe design brought to life
Pewterers Hall, Oat Lane, City of London Details
☎ 0207 353 9595

DISCOVERY WORKSHOPS AT HOMEWOOD

A series of Discovery Workshops at **Homewood Woodworking Machinery's** Worthing showroom on the first Saturday of each month will give advice on workshop safety and setting up machinery for optimum performance, as well as practical demonstrations of skills and techniques.

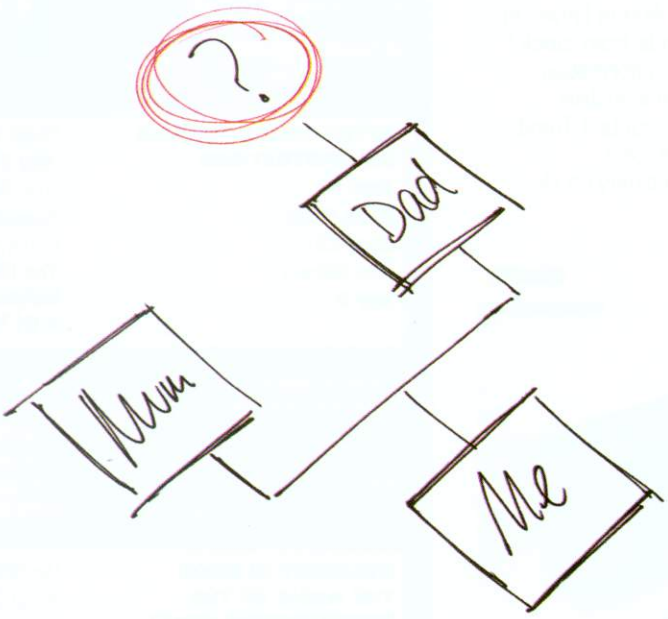
For more about the Discovery Workshops contact ☎ 01903 216113, www.homewoodltd.co.uk.

June 5
Turning techniques – Robert Sorby
July 3
Polishing and finishing – Liberon

Free Demonstration weekends at Craft Supplies.
June 5 - 6
Chris Barker – Woodturning
July 3 - 4
Ian Wilkie – Woodturning
August 7 - 8
Jamie Wallwin – woodturning
For details contact Craft Supplies Ltd, The Mill, Millers Dale, Nr Buxton, Derbyshire, SK17 8SN
☎ 01298 871636
www.craft-supplies.co.uk

Shropshire Association of Woodturners
June 24
Split hollow forms –
Steve Healey
Hare and Hounds, Cruckton, Shrewsbury
☎ 01743 240661

Free Woodworking Show
June 25 - 26
Woodworking and woodturning demos plus demos by SIP Woodworking, Triton, Bessey Clamps, Trend.
Lots of help and advice.
10am to 5pm daily. Free entry and parking
Snainton Woodturning Centre, Snaiton, Near Scarborough ☎ 01723 859545



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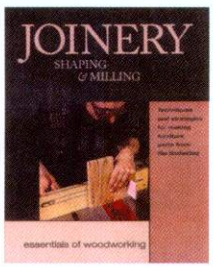
News from the wood

We review the latest woodwork books & videos

Joinery Shaping and Milling

Published by: The Taunton Press
ISBN 1 56158 305 7
Price: £14.95



Culled from the pages of the American *Fine Woodworking* magazine, this is a book that oozes quality right from the off, and is jam packed with top-notch information.

There is none of the padding that can be associated with a lot of books. This one goes straight for the jugular, launching into timber preparation then swiftly moving on to steam bending and coopering, just like that...

Subsequent chapters on routing and vacuum forming are equally impressive before approaching the back of the book which deals with some cracking jointing techniques.

It can be easy to be critical of American workshop practices, especially at the saw bench. There are a couple of exposed blade techniques in here which could be adapted with shop made guarding, but I still think cove shaping is a dubious practice!

The rest of the book more than makes up for it though. Drawings are few and far between, the book relies on excellent photography for the majority of the images, but both of these impart good information readily.

This is a book that is inspirational as much as it is informational. If you enjoy woodwork, then *Joinery Shaping and Milling* should be an essential addition to your library.

Andy King

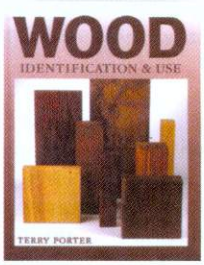
Joinery Shaping and Milling

Words	●●●●●
Drawings	●●●●●
Photography	●●●●●
OVERALL VALUE	●●●●●

Wood Identification and Use

By Terry Porter

Published by: GMC Publications Ltd
ISBN 1 86108 377 7
Price: £24.95



Even with the immediacy of the internet, it's hard to beat a reference book when you need to check out the suitability of a specific timber. *Wood Identification and Use* is a substantial hardback, but I found it slightly disappointing. It certainly has a textbook feel...

Early chapters discuss forest types, seasoning and sawing. Some 200 timbers are listed with both botanical and common names. Each one has a full page giving a description, working properties, seasoning and durability information, plus typical uses. Health risks are stated where known, plus typical growing areas. What you'd expect, really.

Each wood selected has a photo measuring 130x80mm, so you get a fair idea of grain, texture and colour. But examples of finished work dotted about the pages are few and far between. A pity, because there's plenty of useful information otherwise. It would have been useful to check at a glance the endangered status of each timber, although this information can admittedly sometimes be misleading.

Phil Davy

Wood Identification and Use

Words	●●●◐○
Photography	●●●○○
OVERALL VALUE	●●●○○

FREE DEMONSTRATIONS AT ISAAC LORD
June 5
DeWalt power tools demonstration day
June 19
Trend mortice, dovetail and pocket hole jig day
July 3
Bosch power pool demo day
185 Desborough Road, High Wycombe, Bucks HP11 2QN
☎ 01494 835200

Demos at Keenleysides
June 19
Woodturning – Garry Rance
July 24
Demo by Robert Sorby Tools
October 16
Woodturning – Mararet Garrard
Keenleysides Mica Hardware, 19 Station Street, Bedlington Station, Northumberland,
☎ 01670 823133/824988

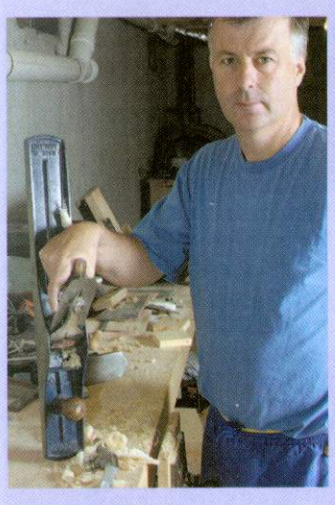
Robert Sorby Woodturning Demonstrations
June 12
Turners Retreat with Sam Abernethy
June 18-20
Taylor Bros, Llandudno
Robert Sorby Athol Road, Sheffield S8 0PA
☎ 0114 225 0700

Yorkshire Woodcraft Woodturning Clinics
June 5/July 3
Woodturning - Tony Wilson
August 7
Woodturning clinics
Yorkshire Woodcraft Supplies Ltd., Finkle Street, Cottingham, East Yorkshire
☎ 01482 844200

Turners Retreat turning demonstrations
June 12
Sam Abernethy
July 10
Tracy Owen
Turners Retreat, Woodturning Centre, Brunel Industrial Estate, Harworth, Notts DN11 8QA. ☎ 01302 744344
www.turners-retreat.co.uk

The Green Wood Trust
June 7 - 11
Chair Making
Station Road, Coalbrookdale, Telford, Shropshire TF8 7DR
☎ 01952 432769
www.greenwoodtrust.org.uk

Letter from AMERICA



US dust control

Keeping a workshop free of dust can be a challenge for most woodworkers and Mark Corke is no exception. In search of a workable solution, he decides to adopt a three-pronged approach – keeping the air coming into the workshop dust-free, fitting extractors to machinery, and cleaning the air that is already circulating

As part of equipping my workshop I am trying to make it as dust free as possible. For longer than I can to remember I have worked in dusty workshops, vowing that one day I will get it sorted. Somehow I never got around to it and the work always seemed to take precedence over a bit of dust here and there.

But no more. I have just vacuumed up a thin layer of dust from everything in sight. It seems to get everywhere, even in closed cupboards, so in an effort to get rid of this blight I have adopted a three pronged approach.

Next door neighbour Tom's new machinery, a 15in planer (right) and an 8in surfacer (above) both by Grizzly. I think Tom and I will be seeing more of each other in the coming months!

Fresh Air

The first of these is to keep the air as fresh as possible, so I have installed a large extractor fan into the bottom of the door to the workshop. Decidedly low tech, this is powerful beast that has a transfer rate of about 3000 cubic feet per minute. With this switched on there is a noticeable difference in the air quality. Much of the very small particles seem to have disappeared, banished to somewhere outside.

Because this transfers so much air it is important to have a window on the other side of the workshop or warm air will be drawn down from the house only to be evacuated to the outside. This does nothing for marital harmony or heating costs, so is best avoided.

Good Extraction

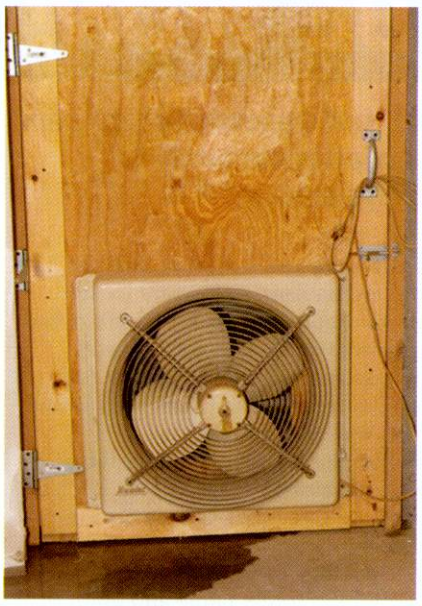
Phase two of dust control efforts is the use of an extractor on machinery wherever possible. I say whenever possible because sometimes the use of an extractor is cumbersome and even if you can attach it, it does not work well. Routers fall into this category.

One of the beauties of the router is how portable and easy to use it is; but the cable is bad enough and as soon as you start to add extractor hoses and plastic dust shrouds, that scratch and charge with static electricity attracting dust and rendering the cut impossible to see, the router starts to use some of its handiness.

Dust extraction on routers does not work when doing an edge cut anyhow as the chippings and dust are ejected backwards or sideways, but always ending up in my trouser pockets!

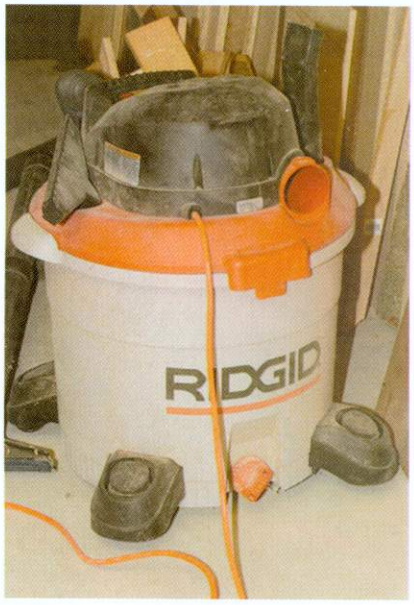
I am considering installing a fixed extractor system with ductwork to each of the machines; spindle, bandsaw, chop saw and so on. Of course, these machines do not come cheaply, so until that happy day arrives I have been using a brace of Rigid shop vacs.

These machines are available from Home Depot stores here, powerful although a little noisy they work well, providing you keep the filters clean. They can handle all my needs for



Immensely powerful, this window fan in the bottom of the door sucks most if not all of the airborne dust to the outside

These particular shop vacs, which are made by Rigid, are available in Home Depot outlets in America for $55, so that when they wear out they are cheap to replace.



The castors on the bottom of the empty bins also make them a handy, roving rubbish cart or a container for oddments of wood

the time being, but best of all they are cheap so I can afford to replace one if it gets broken. Of course, the filter takes out most of the dust but small particles are ejected into the air in the workshop and this is taken care of by the large fan in the door, mentioned above.

Cleaner Project

My third and final line of defense is a workshop air cleaner that I am building. This will form part of a project in a later feature but basically consists of a ply box into which I have mounted a fan. This fan sucks air through a couple of filters at the front and air is ejected out of the back. This is a version of the type of air cleaners that you can buy, but mine cost about £50, far cheaper than the store-bought varieties, and works just as well. I'll be showing you how to make this next month.

Neighbourly Love

I have great news from my neighbour's house; he is now the proud owner of an 8in surfacer and a 15in planer. Made by Grizzly, these appear to be copies of the machines sold here by Jet, Delta and the likes. At first glance they appear well made – they are certainly heavy, I helped him move them around his basement!

"Until I can afford the cost of the planer and thicknesser on my own, I have the use of Tom's machine, although he doesn't know it yet!"

As many readers will be aware, over on this side of the pond it is rare to have a planer thicknesser; most if not all the shops that I have been in have separate machines. There are arguments in favour of both arrangements and although I have always had combination machines in the past, I am coming around to the idea of separate stand-alone machines. One of the advantages is that if you have a heavy workload you can have both machines running at once and after smoothing a face and edge on a board, stuff it through the thicknesser in double quick time without have to alter anything.

Anyhow, until I can afford the cost of the planer and thicknesser on my own, I have the use of Tom's machines, although he does not know it yet! He has asked me to help him wire them up, as he is unsure how to go about this. This will ensure that I get some extra brownie points and I won't feel so guilty about popping next door to plane up a bit of wood from time to time.

Christian Becksvoort

Phil Davy and I visited top New England furniture maker Christian Becksvoort a while ago. You can read all about it in next month's Workshop Angles.

10 PAIRS OF BESSEY CLAMPS TO BE WON!

Cramps, clamps, call 'em what you will, but apparently you can never have enough of them. Here's a great opportunity to expand your collection thanks to L. J. Hydleman & Co

Latest additions to the range from German clamp masters Bessey are these rather spiffing KliKlamps. We've got 10 pairs of KLI 25's to give away, and all for the price of a stamp...

The KliKlamp is an F type clamp with a quick-release mechanism. A steel bar, magnesium clamping head and glass fibre ratchet handle keeps the weight low.

The fixed head has a cross V profile to grip corners or round profiles, while the moving head has a swivelling jaw for bevel clamping work.

The handle has a Vibrofix stepped ratchet mechanism, so it won't loosen under vibration. This makes it safer when using power tools. A trigger releases tension, so it's a doddle to tighten and undo. Clamping capacity between jaws is 250mm, with a 80mm throat.

So how do you win a pair of these marvels of Teutonic clamping? Usual rules, three correct answers are needed, either on a postcard, the back of a sealed envelope or tied to a carrier pigeons leg. And don't forget name and address...

How to enter and win

To enter our competition, simply answer the following three questions. Put your answers, plus address, on a postcard and send to: **Bessey Competition, Good Woodworking, 30 Monmouth Street, Bath BA1 2BW** to reach us no later than Monday July 5th. No multiple entries.

1. The Bessey KliKlamps have strong, powerful grips. But which spinach-eating cartoon strongman has a girlfriend called Olive Oyl?

1. Popeye
2. Danger Mouse
3. Martin Penknife

2. Sport... Bessey clamps work with unerring efficiency, but which Ferrari-driving Formula 1 racing driver is almost as faultless?

1. Stirling Moss
2. Stirling Effort
3. Michael Schumacher

3. KliKlamp jaw are not exactly terrifying, but in the fim *Jaws* what was the creature that terrified the residents.

1. A Bottle Nosed Dolphin with a grudge
2. A Great White Shark
3. A Pill Shark (with a tattoo on his fin)...

50 OUTDOOR PROJECT DVDs GIVEAWAY!

forest

Here's a great way to get started on that outdoor project you've been thinking about. A new DVD from **Forest** focuses on building popular timber structures such as decking, fencing and a dream pergola. Construction is demonstrated in simple, step-by-step stages.

Also featured are **Forest's** complete packs for arches and arbours if you'd prefer to have all the timber, fixings and components in kit form. Worth £7.99 each, there are 50 DVDs to be won!

To enter this competition, just answer the following question. Put your answers, plus address, on a postcard and send to: **Forest DVDs, Good Woodworking, 30 Monmouth Street, Bath BA1 2BW** to reach us no later than **Monday July 5th**. No multiple entries.

- Complete this line from the poem *Casabianca*: *The boy stood on the burning...*

1. Deck
2. Fence Panel
3. Shiplap shed

One of the elegant outdoor structures from timber specialists Forest. Check out their website *www.forestgarden.co.uk*

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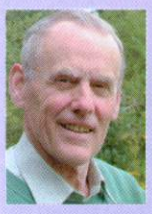
Your Guide to Better WOODTURNING



With planting in the borders at Wilko Towers well under way for the summer season Ian Wilkie demonstrates a simple technique for supporting climbing plants

Dave Roberts attends to the aural qualities of your garden by showing how to make a set of wind chimes

Turning over the pages

Wigwam plant support

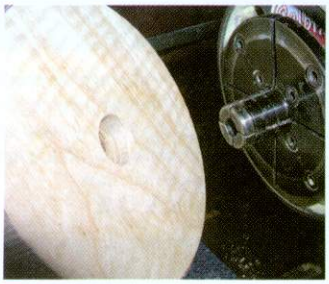
This turned 'wigwam' is designed to give support for climbing plants such as sweet peas and clematis. The central metal pole (an alloy one will not rust) can be of any height but the measurements given in the project are for a pole with an outside diameter of 16mm; adjustments may have to be made here if your pole has a larger diameter. The project was turned on a Selbix Mini lathe and the wood used was ash. You could use any durable hardwood for this, or a well preserved less durable one such as beech.

Turning the Head

1 Start with the top disc, which slides over the pole and holds the tops of the strings. Drill a centre hole right through the disc with a 16mm saw-toothed Forstner bit mounted in a bench drill.

Fit a pin chuck which will expand into a 16mm hole. I used the Selbix Mini chuck with its smallest jaws which

Turning the top finial and collar



01 The top disc mounted on a Selbix chuck with the smallest jaws about to be expanded into a 16mm centre hole

02 Turn the top disc with a 9mm spindle gouge. Take care as you face off the front

03 The Selbix Mini Lathe has built-in indexing in the headstock. Don't forget to remove the pin before starting up

04 Using a small Proxxon drill and a Multistar drilling jig to drill the six string holes

gives an excellent grip in expansion. Turn the blank to the round with a 9mm gouge and form a concave shoulder on the underside.

2 Fit a drill boring jig in the toolrest holder and, using the indexing on the lathe or on the chuck, drill six 3mm diameter holes right through the disc. With a 24 hole indexing system this means selecting every 4th hole. Countersink the holes on both sides with a 'snail' type countersink which gives a very clean finish. Make the countersinking deep enough so that the knots on the ends of the strings will sit down into the hole.

3 The bottom disc stops the pole sinking too far into the ground. Drill and turn it in exactly the same way as the top disc but without the concave shoulder on the underside and the indexed holes. Chamfer the edges.

4 The top and bottom collars are held in position with a screw into the pole and support the discs. Centre pop one end of the blank. With the blank held in a machine vice drill right through with a 16mm saw-toothed Forstner bit.

Mount the blank on the pin chuck and bring up the tailstock fitted with a revolving centre to give support. Turn to a 45mm diameter and then shape the outboard end as shown.

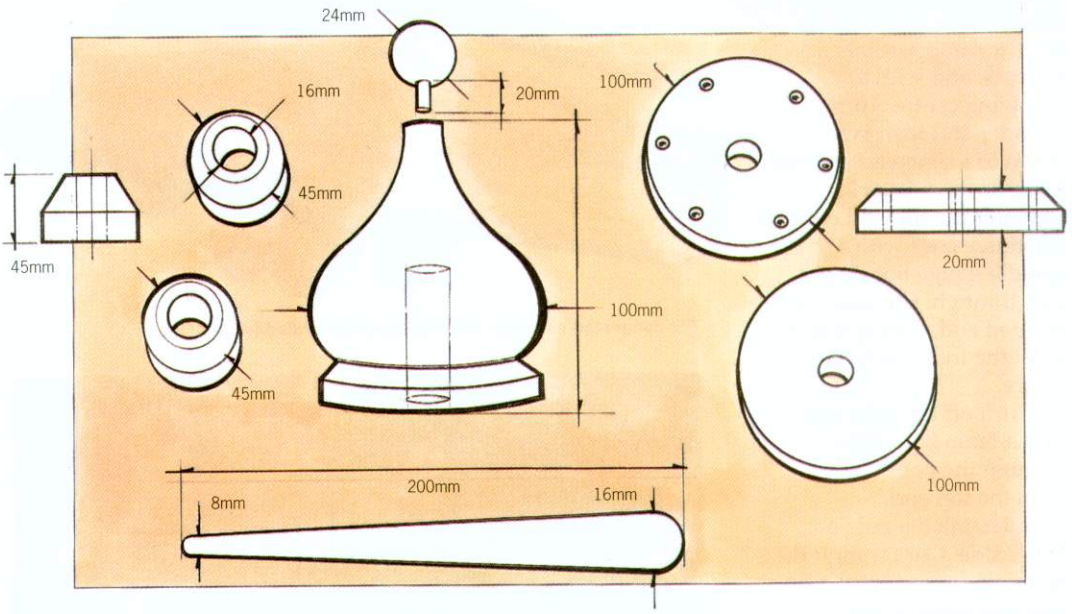
5 The finial fits on top of the disc to cover the end of the pole and the string knots. My finial blank was laminated from two pieces of thicknessed ash as I did not have a suitable piece of timber of the correct size. I used Titebond II adhesive which is suitable for exterior work and cramped up the pieces for several hours or more.

Drill a 16mm hole at one end of the blank to a depth of 40mm. Centre pop the other end and mount the blank giving revolving centre support. Turn a cylinder to a diameter of 100mm with a roughing out gouge.

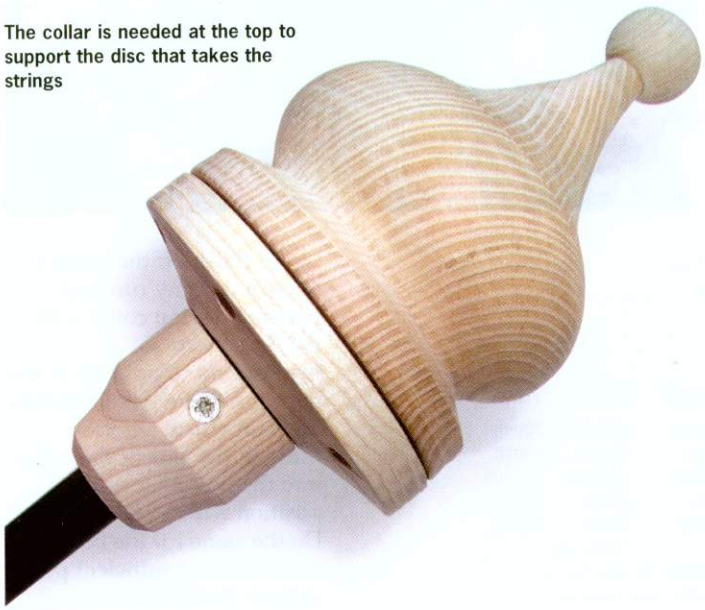
Fit a drill chuck in the tailstock and drill a 6mm diam x 20mm deep hole to take the spigot of the decorative ball. Shape the finial using a 9mm spindle gouge as shown. Sand well before removing the work from the lathe.

6 Mount the blank for the decorative ball between centres and turn to a cylinder with a diameter of 25mm. Form a 20mm long x 6mm diameter spigot at the tailstock end and then start shaping the ball. When done, remove from the lathe and hold the spigot in the chuck jaws to complete the turning. Glue in position on top of the finial.

DETAILS: Climbing plant support

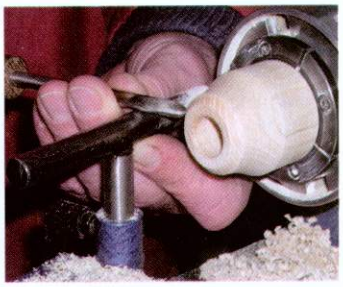


The collar is needed at the top to support the disc that takes the strings



05 The Planet 'snail' countersink has a hole in the side which allows the shavings to escape

06 Countersink both sides. The holes on the top should be deep enough for the knots or the finial will not be flush



07 Turning the collar to shape with a 9mm spindle gouge. This was drilled out first in the centre to fit the pole

08 Gluing and cramping up 2 blanks for the finial. Titebond II is strong and waterproof. Cramp up for at least one hour

Turning the Pegs

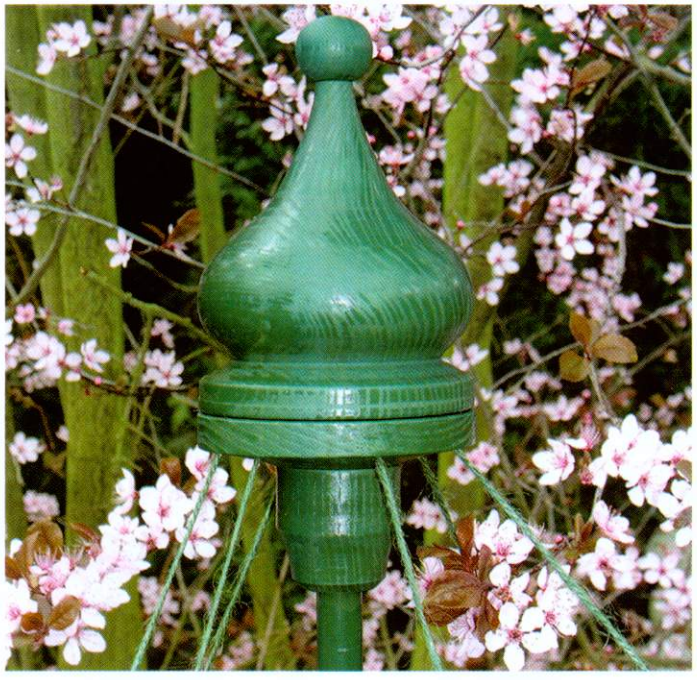
7 Take one square peg blank and hold it in compression in the chuck jaws and support the tailstock end with a revolving centre. Turn to a cylinder and then taper down to a diameter of 8mm towards the tailstock. Chamfer the top end close to the chuck jaws with a small spindle gouge but do not part through. Chamfer the pointed end, taking care not to let the tool touch the centre.

Turn off the lathe and drill a 5mm hole right through the peg 20mm in from the top end. Countersink the hole on either side. Cut through the remaining wood with a fine saw and sand off any whiskers. Repeat for the other pegs.

Finish & Assembly

8 The timber is going to be exposed to all weathers so some sort of finish will be required, and there are many to choose in your local DIY store. I used OS Forest Green which I have used for a number of outdoor projects over the years and have found to be remarkably resilient.

Six completed ash pegs with the top holes drilled for the string



CUTTING LIST

Part	Qty	Mats	Length	Width	Thkns
A Top & bottom discs	2	Ash	100mm	100mm	20mm
B Collars	2	Ash	50mm	50mm	45mm
C Finial	1	Ash	110mm	110mm	110mm
D Ball	1	Ash	50mm	25mm	25mm
E Pegs	6	Ash	220mm	18mm	18mm
F Pole	1	Metal	2m	16mm dia	

Cutting lists give the full length of a piece including the joint but not wastage. Add 5mm in the width and thickness for sawn material.

To finish off the project make a dummy run and position the top collar with the disc and finial temporarily in position at the appropriate height. Once you are happy drill a hole through the side of the collar into the pole and screw in position with a plated screw. Do the same for the bottom collar leaving sufficient pole to push firmly into the soil.

9 To install your planter support, thread the top disc with six lengths of a good garden string and knot each off firmly. Arrange your strings as required and peg them into the soil. Put the finial on top and stand back to admire!

TOOL ON TEST • Axminster

Some years ago Axminster introduced their woodturners' scroll chuck, which was manufactured in their own, modern, CNC workshops. The T8 and K8 chucks tested here have been developed from this original chuck and Axminster's aim has been to keep the cost as low as possible without compromising quality and accuracy.

The two chucks are more or less identical except that the T8 is operated by means of a tommy bar and a C spanner whereas the K8 uses a key. The chucks are available with bodies threaded to suit either headstock spindle diameters of 3/4in x 16 tpi or 1in x 8 tpi; Axminster found that these were the sizes most in demand for small to medium-sized lathes and some degree of standardisation helps to reduce production costs. Threading the body, as opposed to a separate back plate, makes accuracy easier to achieve. Axminster also made allowance for the fact that many workshops are damp and therefore they have nickel plated the bodies and

Pegs and balls

09 Turning the finial to shape. Tailstock support is given with a Planet Slimline revolving centre

10 Turn the decorative ball for the top of the finial. The Selbix toolrest allows turners to work close to small scale work

11 Turn the taper for a peg. The blank is held with the jaws in compression and supported with a revolving centre

12 Drilling through the top collar into the pole so that a woodscrew can be used to secure the collar

lubman chucks T8 & K8

chemically blacked the jaws.

The T8 and K8 chucks have an overall diameter of 80mm and the length, with standard jaws fitted, is 63mm. The jaws are designed to contract on to a 40mm diameter spigot, expand into a 50mm diameter recess or hold a 10mm diameter parallel blank. Each chuck weighs 1.6 kilos. The tommy bar for the T8 locates in one of four shallow holes in the body but a C spanner is provided to locate into the smaller diameter, very shallow holes in the knurled ring of the shell. The K8 has a single key and there are three locating holes in the body.

The jaws for both chucks are clearly numbered and are secured in the numbered carriers by two M5 hardened socket screws per jaw. There are three extra jaw sizes, one screw chuck insert and a faceplate ring available as accessories.

I assessed these chucks on a M330 lathe and because they are compact they are ideal for medium to small lathes. I found the chucks accurate and it was easy to fit and remove the jaws. On both chucks the machined slots for the carriers had very sharp edges on the outer part of the shell and, although a chuck should not be touched when it is rotating, sharp edges like these do pose a risk and poor finish is not acceptable.

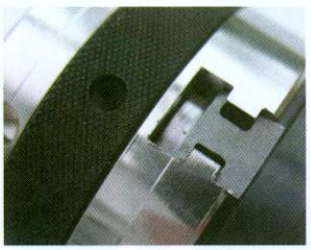
In contrast the four carriers and jaws are well finished and slightly radiused. The plating on the K8 was disappointing, being thin and uneven, but much better on the T8.

The tommy bar holes in the T8 are very shallow and of a somewhat loose fit and they will become easily damaged in use. Finger tightening by using the knurled ring alone is clearly not enough to hold anything but the lightest work so a C spanner has been provided and this works well. The K8 key locates well in the holes and is easy to use.

These are very well priced chucks and do represent good value. So, the question is, does one opt for a tommy bar or a key operated chuck? Most early chucks had two tommy bars, requiring two hands to tighten or loosen the grip, a disadvantage when mounting or removing work. Also there is always the risk that the holes in the chuck body may become elongated with use if the tommy bar is not located with care.

The keyed K8 chuck leaves one hand free to hold a blank

(Left and below) The T8 with tommy bar and C spanner, which require both hands



The key operated chuck, on the other hand, is a more recent development. Here only one hand is needed to turn the key, which leaves the other free to hold the work. Although I have used many tommy bar operated chucks quite happily over the years I am now a complete convert to the keyed ones and I would be happy to pay an extra £5 for the K8.

If you are looking for a larger chuck you may wish to consider the T10 and K10, both of which have an overall diameter of 100mm and a larger selection of accessory jaws.

GW verdict

Value for money ●●●●◐
Performance T8 ●●●◐○
Performance K8 ●●●●○

Price inc VAT: T8 £89.95
K8 £94.95 Axminster ☎
0800 371822

Metric to Imperial conversion chart

Note that dimensions are only given as an indication and are only accurate to 0.5mm. Do not rely on this for critical conversions

1mm	1/32in	51mm	**2in**	**20mm**	25/32in	70mm	2 3/4in	39mm	1 17/32in	89mm	**3 1/2in**
2mm	3/32in	52mm	2 1/16in	21mm	13/16in	71mm	2 25/32in	**40mm**	1 9/16in	90mm	3 17/32in
3mm	1/8in	53mm	2 3/32in	22mm	7/8in	72mm	2 27/32in	41mm	1 5/8in	91mm	3 19/32in
4mm	5/32in	54mm	2 1/8in	23mm	29/32in	73mm	2 7/8in	42mm	1 21/32in	92mm	3 5/8in
5mm	3/16in	55mm	2 5/32in	24mm	15/16in	74mm	2 29/32in	43mm	1 11/16in	93mm	3 21/32in
6mm	1/4in	56mm	2 7/32in	25mm	**1in**	75mm	2 31/32in	44mm	1 23/32in	94mm	3 11/16in
7mm	9/32in	57mm	2 1/4in	26mm	1 1/32in	76mm	**3in**	45mm	1 25/32in	95mm	3 3/4in
8mm	5/16in	58mm	2 9/32in	27mm	1 1/6in	77mm	3 1/32in	46mm	1 13/16in	96mm	3 25/32in
9mm	11/32in	59mm	2 5/16in	28mm	1 3/32in	78mm	3 1/16in	47mm	1 27/32in	97mm	3 13/16in
10mm	3/8in	60mm	2 3/8in	29mm	1 5/32in	79mm	3 1/8in	48mm	1 7/8in	98mm	3 7/8in
11mm	7/16in	61mm	2 13/32in	**30mm**	1 3/16in	80mm	3 5/32in	49mm	1 15/16in	99mm	3 29/32in
12mm	15/32in	62mm	2 7/16in	31mm	1 7/32in	81mm	3 3/16in	**50mm**	1 31/32in	100mm	3 15/16in
13mm	1/2in	63mm	2 15/32in	32mm	1 1/4in	82mm	3 7/32in				
14mm	9/16in	64mm	2 17/32in	33mm	1 5/16in	83mm	3 9/32in				
15mm	19/32in	65mm	2 9/16in	34mm	1 11/32in	84mm	3 5/16in				
16mm	5/8in	66mm	2 19/32in	35mm	1 3/8in	85mm	3 11/32in				
17mm	21/32in	67mm	2 5/8in	36mm	1 13/32in	86mm	3 3/8in				
18mm	23/32in	68mm	2 11/16in	37mm	1 15/32in	87mm	3 7/16in				
19mm	3/4in	69mm	2 23/32in	38mm	**1 1/2in**	88mm	3 15/32in				

Metric equivalents
25.39mm = 1in
305mm = 12in
1 metre = 39⅜in

A wind in the willow

Bring the gentle sound of the wind into your garden this summer by turning **Dave Roberts'** excellent set of wooden wind chimes

The gentle sound of wind chimes tinkling away in a light summer's breeze can be very soothing and uplifting, though to be honest they also have a tendency to drive you bonkers when the wind gets up in the middle of the night. Nevertheless, a lot of people like them to judge by the numbers found in garden centres.

Most are made of metal or bamboo, with the length and thickness of the individual sound tubes affecting the timbre and sound of the chime. The one I have made here has six tubes in sycamore; a dense hardwood like this gives a better quality of 'ring'. The rest is in mahogany. It is better to use hardwood for strength and it will also weather better. The tubes have a hole all the way through and each one increases in length by 30mm which will give you different tones.

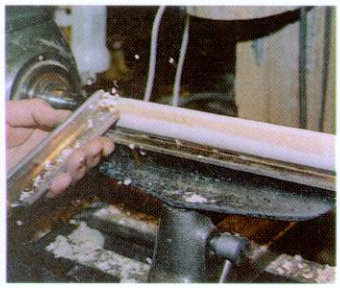
Turning the Tubes

1 Cut the timber for the tubes to length. The largest is 340mm, the smallest 190mm. Put the blanks between centre and tun them down but not to the finished size just yet. This will be just to take off the square edges, making it more comfortable to hold while they are being drilled. You can drill the holes on the lathe, which will be easier than the pillar drill.

The hole in the tubes is 12mm so put a Jacobs chuck into the headstock with a 12mm drill bit and put the lathe on a speed around 400 rpm. Place the drill into the centre of the timber and bring the tailstock up and place it in the other end. Then start the lathe, hold the timber and wind in the tailstock. Occasionally unwind and remove the debris. A standard length drill won't reach all the way so you will have to turn the tube around and drill the other end.

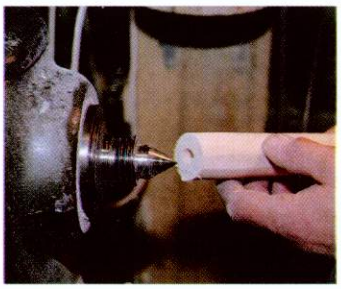
2 The best way to turn a tube like this is to mount it on a dead centre fixed into the headstock then put the revolving centre into the other end. This guarantees the hole is centre and

Turning the chimes and the clanger

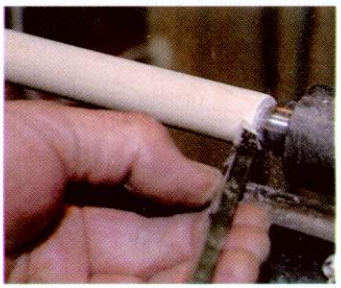


01 Cut your chime blanks to length then rough turn to the approximate diameter at this stage

02 Drill out the centres on the lathe with a drill bit mounted in the headstock. You'll need to drill from both ends



03 Now mount the blank between a dead centre in the headstock and the tailstock, locating these in the holes



04 This will guarantee that the hole is accurately central as you turn to the finished diameter

the wall thickness even.

Use the roughing gouge to turn to the finished diameter of 22mm. Place a steel rule on the tube to check that it is flat and use vernier calipers to check the diameter, but do remember this isn't rocket science or precision engineering and a little discrepancy won't matter. After all it is only a garden ornament. Use the parting tool to take off the sharp edges of each end of the tube. Finally sand the tube, then stop the lathe and rub with the grain to get rid of any sanding marks.

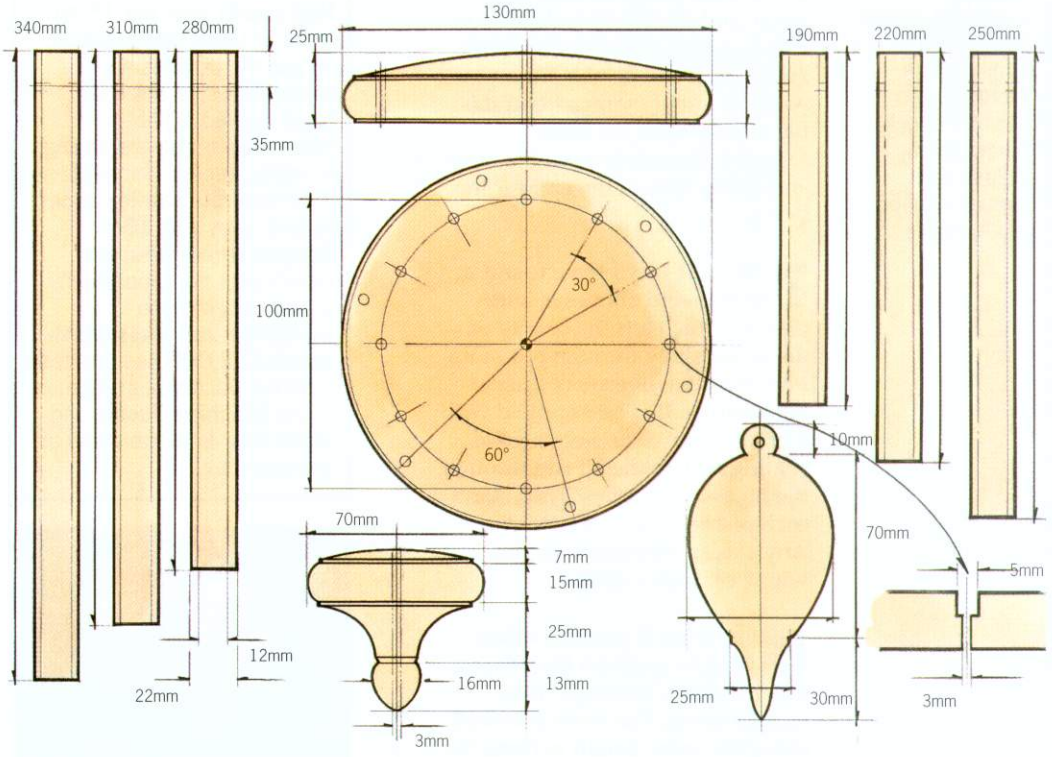
Now you can drill the holes in the tubes for the string. Measure 35mm down from one end and drill a 3mm hole and the opposite side drill a 5mm hole. With the larger hole you will be able to hide the knot on the string.

Clanger and Pendulum

3 The clanger sits in between the tubes with about 6mm clearance, much further away and it would take a strong breeze to get them to chime. Mount a piece of mahogany or any other contrasting hardwood onto a screwchuck and bring the tailstock up for support. Use the 9mm gouge and the parting tool to turn it to shape. Careful use of the gouge will produce a good finish if you keep the bevel rubbing. The finial on the end can be turned with a detail gouge then you can move the tailstock away. In the centre of the clanger is a 3mm hole for the string. Put the Jacobs chuck into the tailstock with a 3mm bit and drill the hole on a low speed. Now sand it working through the grades and use the parting tool to part it off.

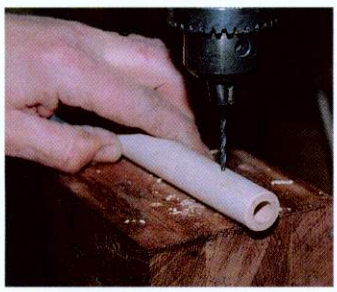
4 The top is a simple disc with lots of holes drilled in it for the string. Mount the disc onto a screwchuck which has a scrap piece of wood fixed to it with some double sided sticky tape on it. Push the disc on and face it up with a 9mm gouge. Sand it, remove it and turn it around. Now you can turn it to the finished diameter and thickness. Use the 9mm gouge to turn the outside rim and use the parting tool to turn the fillets either side. The top of the disc is slightly domed so when it rains the water won't settle. Use the 9mm gouge to turn the top, keep the bevel rubbing and this will leave a good finish. When all the turning is done, finish off by sanding, working through the different grades.

DETAILS: Wind chimes



5 An indexing facility on the lathe it will make it easier to mark out the positions for the holes to be drilled. Or you could walk a pair of callipers around it. With six tubes you will need 12 holes, two for each tube at 22mm apart. Then you will need six more holes to hang the wind chime up. Remove the top from the lathe and drill the holes on a pillar drill. All the holes are 3mm and drilled all the way through. Then turn the disc over and drill a 5mm hole 1/3rd down only on the six holes that hang the wind chime. You will be able to hide the knots on the string in these, making it look neater. Don't forget to drill the hole in the centre for the clanger.

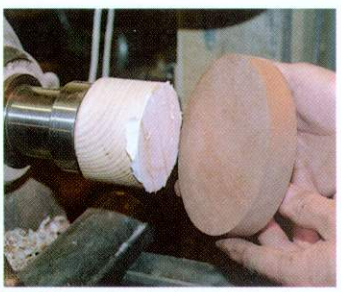
6 The pendulum has to be light in weight and wide so that it will move easily in a light wind which in turn moves the clanger. The pendulum can be turned in one piece. Mount a flat piece of timber in between centres. You will have to use a small drive



05 Drill a small hole hear the top of each tube for the fixing cord. This should go through both sides

06 Turn the clanger to shape on a screwchuck, using the tailstock for support. A 9mm gouge will suffice

07 Before parting off, drill a 3mm hole through the centre with a bit mounted in a Jacobs chuck in the tailstock



08 Use a glue chuck to hold the flat blank for the top disc while you face up the underside of this

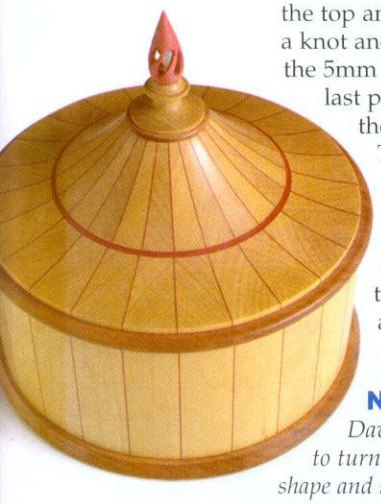
TOOLS YOU'LL NEED

Roughing gouge
Parting tool
9mm gouge
Detail gouge
Jacob's chuck
3mm, 5mm, 12mm drill
Vernier calipers
Screwchuck

centre to grip it. Taking light cuts you should have no problems. Use a 6mm gouge to turn it to shape and for the finer detail you will be better off using the detail gouge. You will be able to sand it with the lathe rotating. Sand the flat surface with the lathe stopped. Remove it from the lathe and drill a hole in the end for the string.

7 The best way I have found to finish wind chimes is with teak oil which lets the beauty of the wood show through but more importantly will protect against the weather. It is best applied with a brush. Give each piece a good coating and let the oil run through the holes in the tubes. Then stand each piece up and leave to dry. Any excess afterwards can be wiped off with a cloth.

8 It is better if you use nylon string to suspend the tubes as this will last a lot longer than normal string. Cut three pieces of string the same length to hang the wind chime up. Thread the string through the holes and tie a knot. Pull the string and the knots will fall inside the 5mm hole. Then cut six pieces the same length to hang the tubes. Thread them through the top and through the tubes. Tie a knot and hide the knot inside the 5mm hole inside the tube. The last piece of string will hold the clanger and pendulum. Tie the string onto the pendulum through the clanger and tie a knot in it so the clanger doesn't fall down. Then thread it through the top and tie a knot.



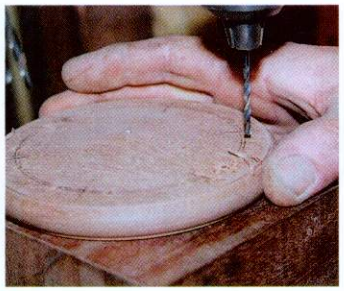
NEXT MONTH

Dave Roberts shows you how to turn a jewellery box in the shape and style of a circus big top. Bizarre but true!

Forming a top and pendulum

09 Turn the blank over and turn the disc to circular then form the rim with a slight bead

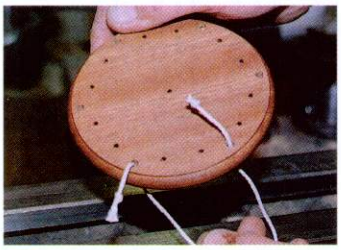
10 Finish the disc by turning a gentle domed shape on what will be the top surface



11 Mark out the rim carefully for the hanging strings and drill the holes under a pillar drill

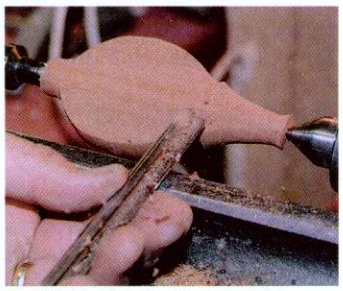
150th issue

Next month sees our 150th issue of *Good Woodworking* so join the team as we celebrate with a splendid issue packed full of informative tests, great things to make, superb competitions – we have **50 Stanley tapes** to give away plus **150 Snappy driver kits**, and there's your first opportunity to **win a complete workshop and tools worth about £12,000** and courtesy of those wonderful gentlemen at **Jet Machine Tools**), and all the best from the world of woodworking.

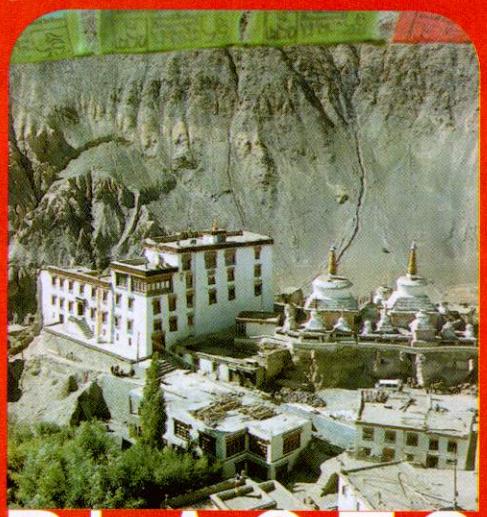


14 Use a nylon cord to hang the tubes from the disc, Then knot in a central cord to hang the clanger and pendulum

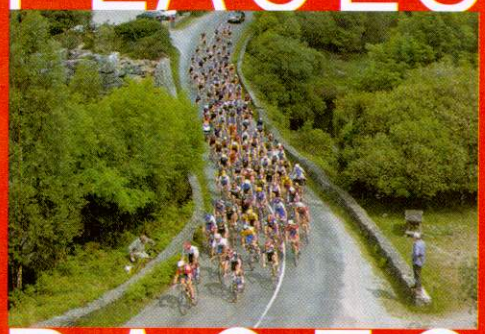
13 I used a teak oil to coat the wind chime tubes and hanger and protect them from the elements



12 Hold a flat disc for the pendulum between centres and gently turn the finished shape with a gouge



PLACES



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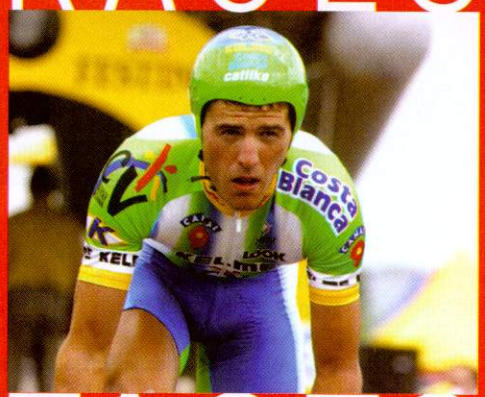

FACES

Take a fresh look at the world of cycling

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Weekend Woodwork

Projects you can complete in just a few hours

Wind power

A celebration of scrollsaw work is on offer with **John Everett's** amusing whirligig, although whether that little fellow will ever get his log sawn is very much open to debate...

Every garden should have one! This whirligig project has a figure sawing wood for all eternity as the wind blows, and will look fine mounted on top of a pole or on a shed roof. It would look very apt up on your workshop roof to give this a distinctive appearance.

Automatons like this are great fun to make and an ideal project for scroll saw enthusiasts, as there are loads of small parts requiring careful cutting out.

Making the Whirligig

1 Start with the propellor unit. Lay out the four blades on a sheet of 3mm ply. By alternating the top and bottom of each, you will get all four blades from a fairly small piece of ply.

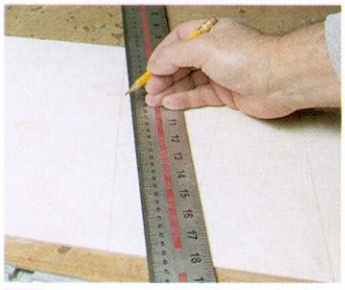
Next is the propellor disc onto which the blades will ultimately fix. This is a circle of 6mm ply and it is a good idea while you are marking this out for cutting to mark the centre point for drilling later on.

2 Now on to the propellor boss, which can be made from a small square of hardwood. This serves to provide a good fixing with plenty of glue area for the main shaft, which is a length of 12mm hardwood dowel. Cut this piece square, then drill the hole for the dowel and make sure it is a fairly snug fit. Remove the corners with a saw and then round off the boss on a bench sander.

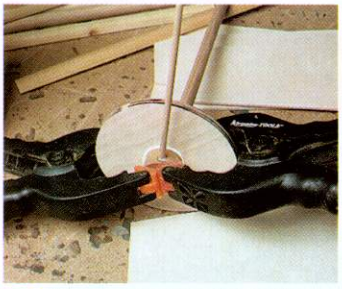
Drill a corresponding hole in the disc and glue the hardwood dowel in place, together with the boss at the front. With this in place, drill a hole right through the boss and the dowel and secure the whole thing with a short length of 3mm dowel by way of a locking pin. Clamp this sub-assembly up and leave it for the glue to dry thoroughly.

3 While the glue is drying, mark up and cut the vane for the whirligig from a sheet of 3mm or 4mm ply. There is no need to use heavier material for this as the only load on it is a little wind pressure while it keeps the whirligig facing into the wind. The example shown

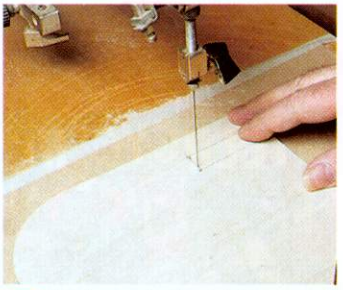
Cutting out the propellors



01 Mark out a sheet of ply so that all four propellor blades can be cut economically from the same sheet



02 Clamp the propellor disc and its associated components together while the glue is setting



03 This is a project to delight the scroll saw enthusiast – this tool makes light work of cutting out the components

04 Mark up the dowels which are used for fixing the blades onto the propellor disc

here was cut roughly in the shape of a garden shed, which seemed in keeping.

4 The next step is to make up the dowels which will connect the blades to the propellor disc. Cut the four lengths of dowel and mark the positions from the centre of the boss to the edge of the disc. This area is then flattened so that the dowel will sit flat to the disc and provide edge gluing areas plus added strength. Do this for all four of the dowels.

Now repeat this exercise for the upper parts of each dowel but at 45° to the disc flats so that the blades will be angled at 45° to the wind once the propellor has been assembled.

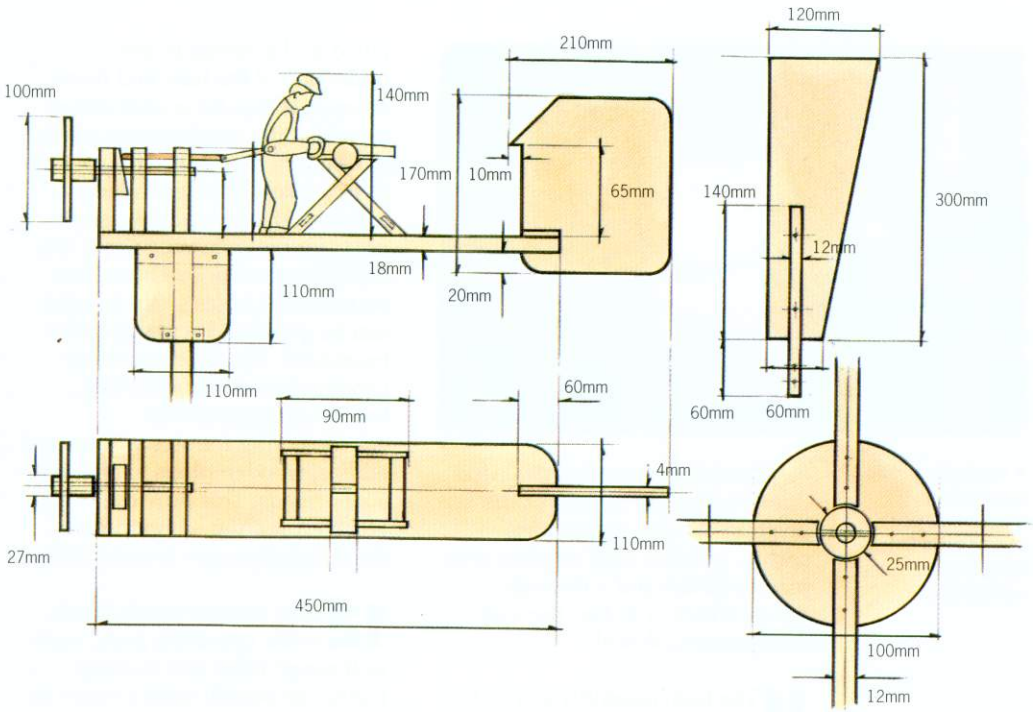
The blades are fitted to the dowels and the dowels to the propellor disc with M3 screws, plain and locking washers and nuts, plus the glue, providing adequate structural strength.

CUTTING LIST

Part	Qty	Mats	Length	Width	Thkns
A Baseboard	1	Softwood	450mm	110mm	16mm
Steering vane	1	Plywood	210mm	170mm	4mm
Propellor blades	4	Plywood	300mm	120mm	4mm
Propellor disc	1	Plywood	100mm dia		6mm
Gearbox cam plates	3	Softwood	110mm	110mm	16mm
Base fixing plates	2	Softwood	120mm	110mm	16mm

6mm, 20mm 9mm and 3mm dowel plus offcuts for sundry small items. Plain washers, nuts and bolts etc, weatherproofing finish, wood glue and paint of choice for sawyer and 'shed' wind vane.

CONSTRUCTION: Whirligig plans



5 Now cut a spacer which will fit between the back of the propellor disc and the first of the upright plates on the base. The purpose of this is to ensure clearance between the sloping edges of the blades and the base itself. Without it the blades would be unable to turn! This piece can also be rounded over and secured with glue and a locking dowel.

With the glue fully dry, give the propellor unit a good coating with weatherproof finish – I used the sort that does exactly what it says on the tin – in light oak stain colour which provides a good tone on the finished item without being too dark. But this is purely a matter of personal preference.

6 While all that is drying off, measure up and cut the end pieces for the saw horse which goes in front of the 'sawyer', and all the other bits. Assemble the saw horse ready to hole its log which has a fairly wide slot cut into the top to retain the saw in position while in operation.

Cut half lap joints for the cross members at each end and glue and pin it all together. This too can have a good coat of weatherproofing at this stage. You can leave this until later, but it is much easier to cover everything at this point of construction.

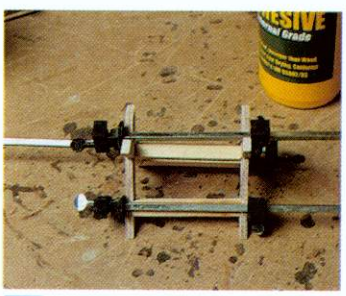
7 Cut out the 6mm ply shape for the sawyer and saw a length of thickish dowel to serve as your log. Decorate the sawyer with colours of your own choice before assembly. I used the little tins of Humbrol enamel then coated it with clear varnish afterwards. Cut a couple of small slots on the underside of the log to give it more purchase and a better glue area when you glue it in place on the sawhorse.

There will need to be two small slots at right angles to each

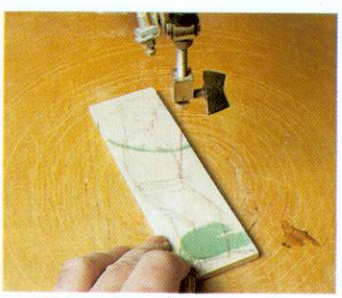
Building the components

05 Carefully secure the dowels onto the blades with small clamps while the glue dries

06 A Screwfix selection pack is ideal for the nuts and bolts which secure the propellor blades in place



07 Assemble the saw horse and clamp it together with mini-sash clamps while the glue dries



08 Cut the body of the sawyer from a sheet of ply. Again, a scrollsaw is the perfect tool for this

other to sit snugly into the top of the sawhorse.

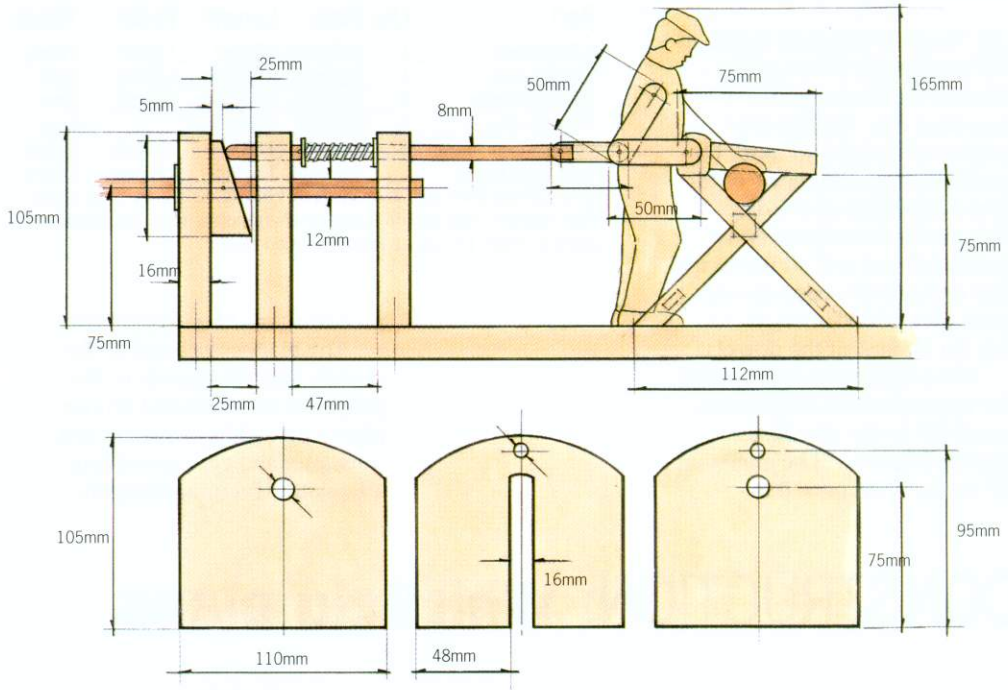
8 Offer up your painted sawyer, alongside the saw horse to align the left arm so that the hand rests on the log. The arm can now be glued and clamped in place so that when sawyer and saw horse are assembled in place on the base, you will have an additional glue point between the hand and the log for a little extra strength.

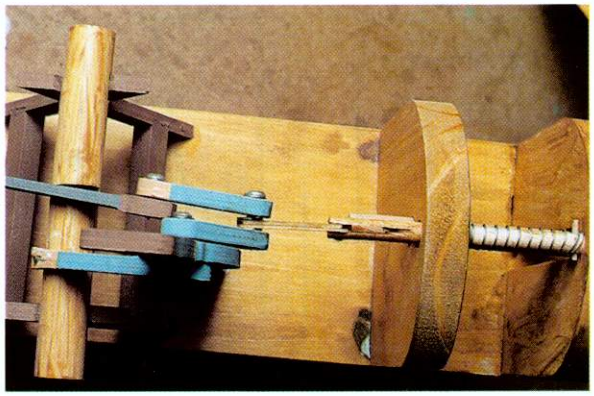
Now assemble the right arm together with the push rod which will operate the sawing action. This is assembled using plain washers to provide a bearing surface between each piece of ply and secured with some round-head self-tapping screws. The screws are inserted into pilot holes and done up – not too tightly – so that the joints will move freely.

9 Glue and screw plate No 3 (see drawing) to the baseboard. Place the sawyer and horse in position and thread the operating dowel through the hole in the plate, then mark and cut the dowel to length. Round over the end of the dowel for smooth operation. Test the propellor to ensure the holes line up well for the dowel, which is cut to length so that a little dowel protrudes beyond the hole in the plate.

10 Next mark the position on the propellor dowel for the operating cam. This is a piece of 20mm thick x 50mm diameter wood tapered from full thickness to approximately 5mm. A disc sander will make short work of this step. Drill a hole to fit the cam over the dowel and then a smaller hole through the side of the cam for a locking dowel so it will not shift once installed. The propellor assembly can now be permanently fitted to the base, and plate No 2 glued and screwed in place.

CONSTRUCTION: Whirligig sawyer





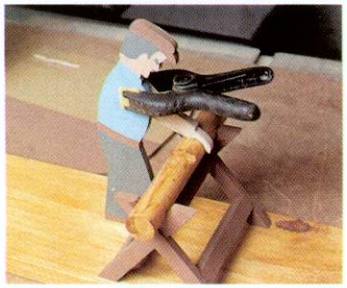
A relatively simple mechanism means that you should have little trouble with construction

Check the operating push-rod dowel for length and mark the position for the compression spring, which is held in place with plain washers and a through dowel which is drilled through the operating dowel.

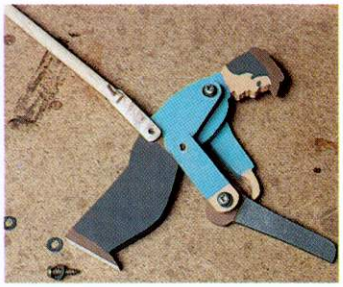
11 The final assembly step is the mounting bracket, which is glued and screwed to the underside of the base and forms an open socket for a wide dowel on which the whirligig can rotate to face into the wind. This consists of two side plates separated by blocks with appropriately sized holes for the mounting shaft. The block nearest the baseboard has countersunk holes so the bracket can be glued and screwed to the baseboard. The glue and screw construction of the mounting bracket is disguised by counterboring the screw holes and adding wooden plugs to hide the screw heads. This provides extra weatherproofing – important as the finished project lives outside.

12 Add exterior grade finish, while operating parts, such as through holes and moving joints, can benefit from a squirt of drawer easy glide aerosol.

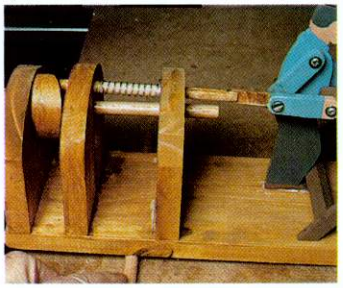
Gluing and final construction



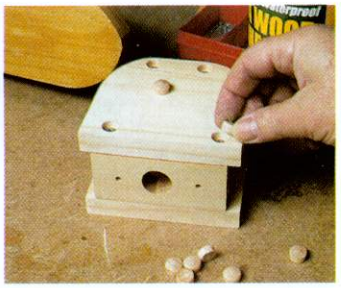
09 With both sections painted, position the sawyer's left arm and glue and clamp it in position



10 The right arm ready for assembly using self-tapping screws and plain washers to provide a bearing surface



11 With the operating dowel and ply linkage assembled, make sure that all moving parts still move freely



12 The screw heads on the mounting bracket are hidden through the clever use of wooden plugs

A garden in miniature

When **James Hatter** considered building a window box, there were no thoughts about keeping it on the small size. And with a combination of glue, biscuits and screws holding it together, this is a pretty sturdy construction indeed

A window box can be used as a feature to add colour and interest to a house, while also providing a means of growing plants for anybody without a garden. This project describes the construction of a window box measuring 1520mm long, 220mm high and 220mm wide, with the length chosen to slightly exceed the width of the window opening.

The front is angled out from the base and a decorative edge is cut at the top and the top of the sides, while the back has a much simpler decoration. 18mm WBP plywood was chosen because it is strong and durable, as well as providing a good surface for a woodstain varnish or paint.

The panels are joined to each other with size 10 biscuits, glue and additional screws that are counterbored and plugged. The box can be wall mounted or set on spacer blocks against a wall or border – simple wall brackets are available if required.

If the box is to be used where it might be viewed from both sides, then you might want to consider having both the front and back panels angled out.

You could alter the dimensions and finish on your window box to accommodate your home and personal tastes

Construction

1 The front panel is 1520x220mm, using 18mm plywood, while the bottom edge has a 7° angle cut and the top has a decorative shape. Make a half template using card and transfer the shape onto the front panel. Cut out the shape with a jigsaw and sand smooth.

The bottom panel is 1520x164mm with a 7° angled edge at the front. As a result, cut the front and bottom panel at the same time, allowing the same 7° cut to serve both panels at the same time.

2 The back panel is measures 1520x220mm. Mark and cut a simple decoration of your choice towards the top edge.

3 The end panels are each made from a 200x189mm blank of 18mm plywood. Cut the front part of each panel at 7°, which will give a bottom edge measurement of 164mm. The top edge is rounded to blend with the front and back panel decoration.

Prepare the panels for assembly by marking positions for biscuits and screws. Cut size 10 biscuit slots and drill 4.5mm clearance holes, then counterbore so that they will take wood plugs or filler. You will need to angle the biscuit jointer fence by 7° for the front panel to bottom panel slots.

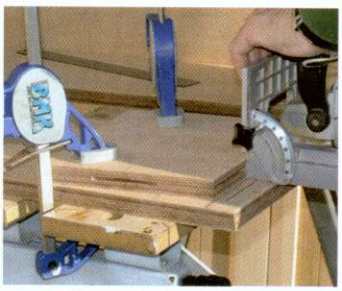
Drill 25mm holes in the bottom panel for drainage, then dry fit the panels and drill 3mm pilot holes to take the screws.

Constructing the carcase

01 For the sides of the window box, use a card half template to ensure that both sides are the same.

02 You can cut the tapered edges on a table saw with the aid of a taper jig or just a mitre fence

03 As you'll be watering the plants that will live in the window box, you'll need to drill drainage holes in the base



04 Cut a series of biscuit slots with a biscuit jointer in order to join the different sections together

Assembly

4 Lay the back panel flat, apply suitable exterior grade glue and size 10 biscuits, and then join the bottom panel to the back panel. Use 4x30mm screws to pull in and reinforce the join.

Next, join the end panels using biscuits, glue and screws. Follow this by joining the front panel.

Fill the screw holes with wood plugs or exterior grade filler. Sand the box smooth and take off any sharp edges.

5 Give the box a coat of wood preservative – I used water based combined insecticide and fungicide.

A durable finish is provided by a good quality exterior grade water based woodstain varnish. I used an antique pine colour, although you could choose whichever finish that suits your requirements. Apply a dilute coat and allow this to dry. Denib the surface then give a further two coats of full strength varnish to all surfaces, both inside and out. An alternative is an exterior grade paint of the required colour.

6 Each of the brackets has three components, a 530mm long upright, a 225mm support and a 255mm angled support, all made from 20x69mm pine.

The angled support has 45° angles cut at each end.

Mark the positions for the supports on the upright and the drill 4.5mm clearance holes for the attaching screws and 5mm for the bracket fixing holes.

Assemble the bracket using glue and 4mm x 40mm screws.

Finish in the same way as described for the box.

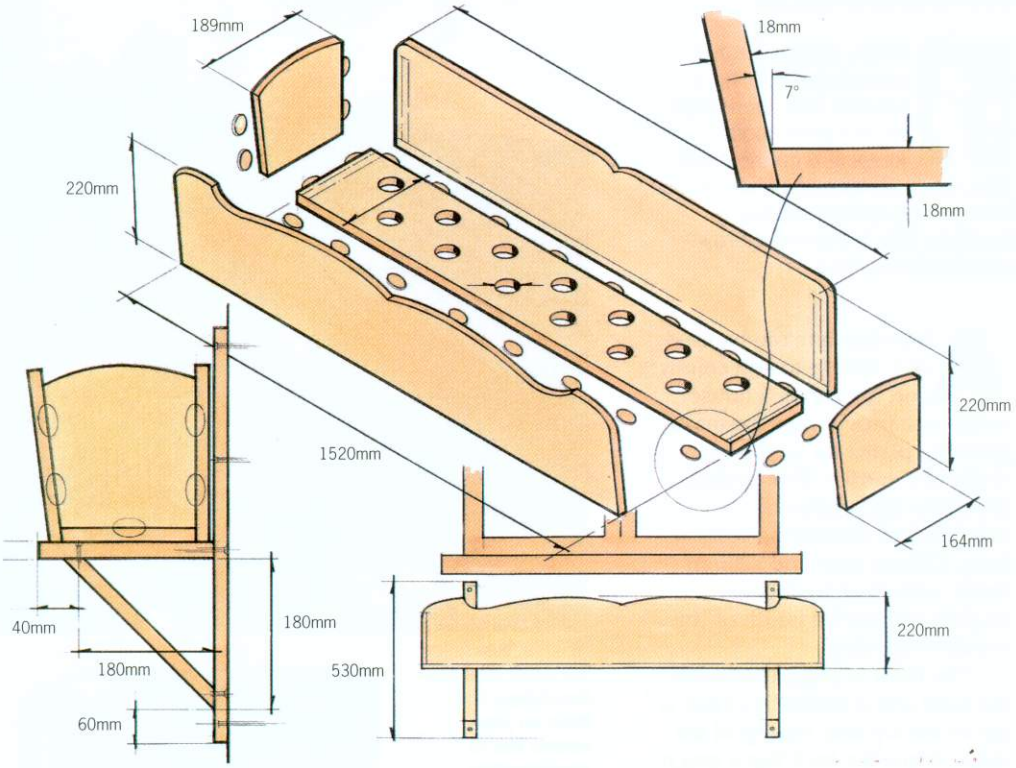
Finishing touches

7 For wall mounting, mark the positions for the wall brackets, ensuring that the supports are level, and drill holes to take wall plugs. Then fix the brackets to the wall using 5x60mm screws.

Place the window box onto the bracket supports and centralise. Attach the box to the brackets using 4x25mm screws through the top part of the back panel and 4x30mm screws through the bracket support into the box base. Use stainless steel or brass screws so that they can be removed easily for routine maintenance.

8 Line the box with black plastic with holes cut to match the drainage holes, and then fill with growing compost. Alternatively, grow the plants in removable pots and camouflage the pots using bark chippings.

CONSTRUCTION: Window box



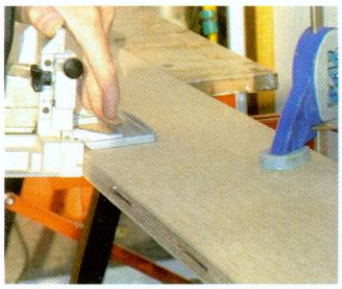
CUTTING LIST

Part	Qty	Mats	Length	Width	Thkns
A Front panel	1	WBP Ply	1520mm	220mm	18mm
B Back panel	1	WBP Ply	1520mm	220mm	18mm
C End panels	2	WBP Ply	189mm*	200mm	18mm
D Bottom panel	1	WBP Ply	1520mm	164mm	18mm
E Bracket upright	2	Pine	530mm	69mm	20mm
C Support	2	Pine	225mm	69mm	20mm
C Angled support	2	Pine	255mm	69mm	20mm

Cutting lists give the full length of a piece including the joint but not wastage. Add 5mm in the width and thickness for sawn material.
* make this 215mm if both front and back panels are angled out

WBP plywood provides a good surface for any stype of finish

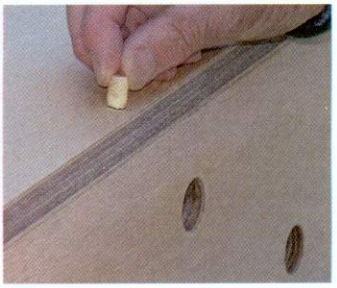
Gluing and finishing



05 If the sides of the window box are at an angle, you'll obviously have to angle the biscuits to a similar degree

06 Despite the size of the window box, a combination of biscuits, glue and screws will mean a solid construction

07 After construction, make sure that the glue has set completely before adding plants to the structure



08 Fill in the screw holes with wood plugs or exterior grade filler, then sand the box smooth of any rough edges

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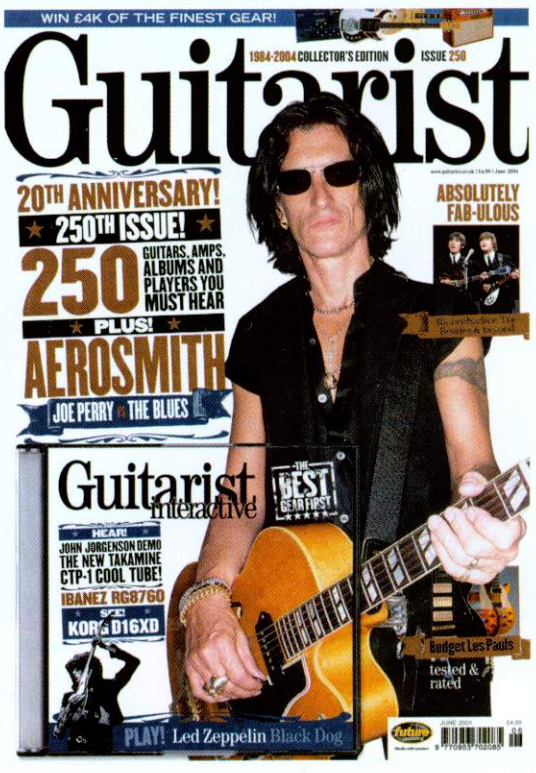

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To advertise in Good Woodworking please call Steve or Bernice on 01225 442244

PRODUCT KEY CODE

H – HANDTOOLS; P – POWER TOOLS; W – WOODWORKING MACHINERY + TOOLING; CS – CUTTING OR SHARPENING SERVICES;
BS – BOOKS/CATALOGUES;MF – MATERIAL FINISHES; A – ATTACHMENTS; D – DEMONSTRATION AVAILABLE ON SELECTED MACHINES;
T – TIMBER; MO – MAIL ORDER

Tools and machines for sale & wanted

FREE READER ADS

Selling your old router or looking for a bargain biscuit jointer? This is the place for readers to buy or sell anything to do with woodworking, up to a price of £500. All it will cost is the price of a postage stamp. If you are selling an item more than £500 there's a nominal fee of £10

HAND TOOLS

Veritas edge plane Perfect for getting 90° edges on stock up to 25mm thick. Similar to Lie Nielsen no 95, cast in bronze. Used once, an absolute bargain! Cost £135 accept £75. **Lie Neilson Skew block plane, NO 140** This multipurpose plane is brand new and in it's box. Cost £138, bargain at £90. **Ray Iles, A5 Smoother** Beautiful Norris style smoother with rosewood handles, A2 fully adjustable blade and coffin shaped sides. 18 months old vlu, cost £350 bargain at £195. **Lie Neilson No 4½ Smoother**. Fitted with the high angled frog the ultimate smoother! Heavy, long and wide with a 50° York pitch frog for minimum tear out. Little DIY use, genuine reason for sale. Cost £281, will accept £175 **Bosch GF22A biscuit jointer.** Accurate professional jointer with rack and pinion fence. Two years old with light DIY use, NC complete with case. Cost £160 bargain £95. **Rexon Bench mortiser** Good quality cast iron construction and voted 'best on test' Very little DIY use and supplied with a selection of chisels. Two years old, cost £219 bargain £115
David, Southampton
☎ 023 80769644

Lewin 6/15 Universal plane, boxed, 18 cutters, offers. Stanley 13-050 combi plane, 18 cutters, offers. Both with instruction books. Exeter.
Charles Dunstan, France
☎ 0033297 3850449
kdunstan@wanadoo.fr

Trend Combi-jig. Post form jig for kitchen worktops. Instructions included, £50.
Geoff Tidman, Devon
☎ 01822 615071

MACHINERY

Lutz Eurocut table saw £150 ONO. Very good condition, buyer collects.
Lincolnshire
☎ 01522 806704

Electra Beckum planer thicknesser HC260 with wheels, light use, £350. Multico 9" planer/thicknesser, cast iron tables, excellent condition, £250. Tyzack table saw, cast iron/tilting table £95.
Nigel Draper, London,
☎ 0207 635 4162 /07984 996575

Axminster WV1000 wall mounted dust extractor, 100mm hose, as new, used for 4 – 6 hours only, cost £260 sell £190 OVNO.
E. Stinton, North Somerset
☎ 01934 832570

Startrite 12in circular saw, tilt arbor cast iron table extension bars. Rise and fall 240v. Single phase elec, £475 ONO. Four 12in circular saw blades, all tipped, £15 each. All plus carriage at cost.
Mr G. Child, West Yorks
☎ 01977 556420

Radical armsaw, Eumenia Exact 300 cross cut capacity 300mm. Depth of cut 75mm including floorstand, little use, £270.
Mr M. Green, Warwickshire
☎ 01788 567089

Record router pedestal RPR60T as new, £75. 1/2in Makita router 3612BR 23000 rpm little used, 6 guide bushes, 6 good cutters etc, £80.
J. Knott, Essex
☎ 01245 224691

Mortico mortiser. All 3 phase machines complete with chisels £150, needs tidying up. White head disc sander linisher, £125. Pillar drill, £50. 240volt fretsaw, £125.
Mark Viney, London
☎ 0207 738 5724

Coronet Consort combi 8in saw 4 planer thicknesser, 18in lathe plus tools. Slot mortice and bits, combination table, disc sander face plate, long hole boring tool, £375 OVNO.
J. Pitman, Beds
☎ 01767 227441

Scheppach TS4010 sawbench, excellent condition with 2m sliding table, extension table, off-feed table, SUVA extractor guard, wheel base. £1,300 ONO buyer collects.
Gary Sharpe, Beds
☎ 01582 611497

12in Startrite tilt arbor circular saw r/fall, all cast iron, very good condition, 240v single phase electrics, £475 or VNO.
Mr G. Child, W. Yorks
☎ 01977 556420

Diamond 25in variable speed fretsaw on stand, exc condition little used. Accessories include footswitch, holdown set, toolbridge, 2½in magnifier, quick action blade holders, marquetry jig, blades, etc. Cost over £500, for quick sale, £175.
G. Degg, Stoke on Trent
☎ 01270 872832

Felder BF5-41 combination planer thicknesser/12in table saw/spindle moulder, cast iron tables, 3 x 4hp motors, 3-ph, excellent condition with many accessories including Transwave 1-3 phase converter, £3,000 ONO. FOBC Universal Pillar drill/mill, 1hp, 1-phase, accessories, vgc, £300. Meddings bench mounted drill press 1hp, 1 phase accessories, vgc, £300. Interwood WFO overhead router, 3 phase, £350,ONO.
Simon Clark, Somerset
☎ 01963 370261

Scheppach TKU sawbench, complete with sliding table carriage and panel cutting attachment. 18 months old, £325 ONO.
D. Prescott, Lincs
☎ 01529 304581

Unicut 2 with stand and router adaptor, £150 ONO. Mini Mach vacuum bed, £35 ONO. Both items new and unused. Sale due to bereavement, collect Exeter or buyer pays carriage.
Charles Dunstan, France
% 0033297 385 049
kdunstan@wanadoo.fr

Clear out of surplus workshop equipment all in good working order. **Nu-tool dust/chip extractor** £100. Tyme dust extractor vacuum 2 x 1000W motors, 90 lt drum, £200. Woden quick release 9in vice, £35. Porta floor nailer, mallet and nails, £130, D& D alligator saw, needs new blade, £30.
Mr E. White, Oxon
☎ 01235 200171

TURNING

Record lathe, Coronet 1, 3 speed, turns to 12in diameter, 4 jaws, self centering chuck, precision combi chuck, various attachments. Bench for lathe inc. Max between centres 23in overall length 42in, £130.
Sheila Brock, Essex
☎ 0208 597 3025

MISCELLANEOUS

Good Woodworking and Woodturning, over 100 copies of each from 1990 to 2000, £100 the lot, ONO. To be collected.
Tony Evans, Cheshire
☎ 01244 383779

TIMBER

Elm burr slabs, 1 1/4in up to 2 1/2in, various lengths and widths, £30 to £100 range.
James Grieve, Castle Douglas
☎ 01556 503559/ Mobile 07785 313134

Rough cut Brazilian mahogany ex Yandles. Twenty pieces, sizes 35.4 x 16.5 x 1.6in to 61 x 12.6 x 3.1in. Father's death forces sale.
Mr Jay Darvill, Somerset
☎ 01935 422954

Lignum vitae log approx length 952mm dia, 140mm, weight 22kg. Offers.
Alf Williams, Staffs
☎ 01827 283422

WANTED

Mitre fence for Kity 613 bandsaw.
Ivan Sanderson, Cheshire
☎ 01625 251232

Table saw that will take 22mm Dado cutters. Any age, in working order with fence.
John Willis, West Midlands
☎ 01902 762188

Radial arm saw wanted in good condition. Dewalt, Elu 1751, 2ft arm please.
Jon Maktin, West Yorks
☎ 078177 65074

Bench top mortiser, Multico wanted in excellent condition. May consider Record RPM75.
Mr Glenn Perry, East Herts
☎ 01992 620996

BOOK YOUR FREE AD HERE

Fill out this form, including your name and address, and send it to:
The Workshop Sale, Good Woodworking, 30 Monmouth Street, Bath, BA1 2BW
Photocopies of this form are acceptable, or simply write out your ad on a sheet of paper, or email to **goodwood@futurenet.co.uk**

I am a private advertiser. Please enter my advertisement in the Workshop Sale in the following category:
(please tick correct boxes)

☐ **WANTED** or ☐ **FOR SALE** or under the heading

☐ **HAND-TOOLS** ☐ **POWER-TOOLS** ☐ **TIMBER** ☐ **MACHINERY** ☐ **TURNING** ☐ **MISCELLANEOUS**

My advertisement reads as follows:

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☐ My advertisement is for more than £500. I enclose a cheque for £10 made payable to Future Publishing

Name .....

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Postcode..... **Telephone**.....

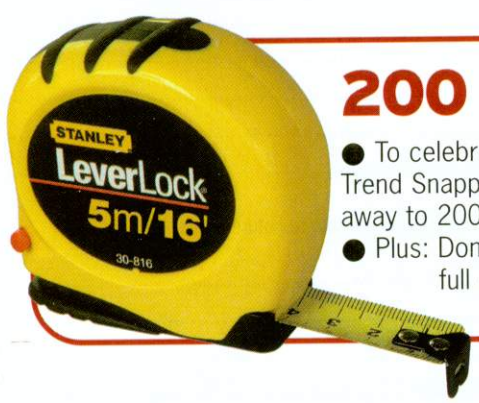
NEXT MONTH IN Good Woodworking

ON SALE WEDNESDAY JUNE 9TH

Celebrate our 150th issue!

Projects:

- Full plans for you to build this superb cabinet maker's workbench with end vice and under storage cupboards in beech
- Learn how to make a simple modern filing cabinet system
- Home entertainment accessories to make: CD trough and TV-zapper basket
- Turn a unique segmented jewellery box in the shape of a circus big top



200 prizes to win:

- To celebrate reaching our 150th issue we have 150 Trend Snappy Drivers and 50 Stanley LeverLock tapes to give away to 200 lucky readers!
- Plus: Don't forget our JET competition, with a complete workshop full of JET machinery to be won!

Workshop Angles

Pay a visit with Phil Davy and Mark Corke to the New England workshops of top furniture-maker Christian Becksvoort

Workshop guide:

- Keep your workshop clean of fine dust with our guide to ambient air cleaners
- Ian Dalziel and Mark Corke demonstrate two different approaches to making your own air cleaner
- We report back on Axminster's massive AFS1000B air filter

Complete woodturning section:

- Ian Wilkie discusses the use of tailstock centres and tests an Axminster belt and disc sander
- Roll up. Roll up. Dave Roberts dusts off his ringmaster's coat and dons a twirly black moustache to demonstrate how to turn this fabulous segmented jewellery box in the shape of a circus big top. All the fun of the fair!

Tools on test:

Bandsaw Guide

Read our exhaustive guide to choosing and using this most versatile of workshop machines, with budgets from as little as £99 to over £1000

- We test new bandsaws from SIP, Charnwood, Record Power and Meber

PLUS ● We test Metabo's new circular saw, plus the latest in overhead table saw guards from Axminster, Veritas spokeshaves and DeWalt's new 3-wheel belt sander

Win a JET workshop!

● Next month sees the start of our fabulous JET competition, where you can win an entire workshop – the building plus the machines – courtesy of JET Tools. It's our biggest-ever competition so don't miss a chance of winning this great prize. Order your magazine now!

End Grain

Don't get Andy King started on customers who don't pay or he just might get onto his pet subjects of dentists and hairdressers as well...

What price woodwork?

Having been a chippy since the late 1970s, one thing I have found is that if you give someone a price for some work which is accepted and then you finish it in next to no time, you will invariably get a few mutterings. "The work was fine but he wasn't here five minutes and charged me X amount of pounds. I don't know how he's got the cheek..."

Of course, when I was younger, power tools were few and far between so the work took longer, which to the client then appeared to suggest greater value for money. Nowadays, if you want to stay in work you can't turn up on jobs with a saw, hammer and plane and expect to earn good money, particularly if you ply your trade on site.

With this in mind, a chippy can easily shell out a couple of thousand pounds on portable kit to make his life easier, and of course, over the course of time, the job speed increases with your own ability. Try telling that to the customer though. Do a job in half the time that you used to and the customer will want to pay half the price!

Plumbers and Mechanics

Now put these people at the mercy of a plumber, electrician or mechanic and things are different. Everyone will have a go at 'a bit of woodwork' if it seems too expensive but when it comes to getting wet, getting killed or walking, Joe Public will pay extortionate fees for what can be ten minutes' work.

As an example, I vividly remember being asked to patch up a rotten barge board on the eaves of a house that someone was trying to sell. When I arrived to price it, I explained what needed to be done, and that I could sort it out from a ladder. "Ooh, you don't mind heights then! Do you think you could give the barge boards a coat of gloss while you are here? I don't like ladders."

Having agreed to do it for £50, I arrived with a triple extension ladder so I could reach the ridge, plus a piece of pre-prepared timber complete with groove for soffit, primed and with two coats of undercoat already applied. The customer and his wife were cutting the grass ready for a viewing later that day, so I set to work.

The whole job took just over an hour, and when I had climbed down and was clearing up, the client asked how much he owed me. I answered that we had agreed a price of £50. Quick as a flash his wife retorted: "You're joking!" implying that it was way too expensive. The fact that forward planning had seen me spend some time away preparing the timber (plus the fact her husband was too scared to go up a ladder) fell on deaf ears and she wasn't prepared to pay the full amount. "Give him £30, he hasn't been here five minutes!" (Sound familiar?)

All well and good, but she's a hair dresser. Had my grandmother gone in for a perm and a blue rinse in her hairdressing salon, sat in the chair for an hour, been presented with a bill for £50 and come up with the same response as my customer, no doubt the police may have been involved!

Just Open Wide

Which brings me on to dentists... A licence to print money if ever I saw one!

I have had very little work done on my pearly gnashers over the last 15 years, so it's strange that every time I go for a check up with my now private dentist (NHS – If only!) he will have a root around and find nothing to do, so will 'just scrape that bit of tartar that's building up'.

A quick flash over with a Dremel for 30 seconds and I'm 30 quid lighter! Now I'm not saying it doesn't need doing, but it seems a lot of cash for something that's not immediately a problem.

With this in mind, I now realise where I am going wrong! There is obviously a niche in the market that needs exploiting...

I have decided, starting with my dentist, to book people in every six months and turn up at their houses and ease their doors and windows and tighten the screws in their shelves. It might not need doing but, as my dentist might well tell me, prevention is better than cure!

Whether I can charge about £300 an hour based on dentistry rates is another story!

"Starting with my dentist, I have decided to book people in every 6 months and turn up to ease their doors and windows"

NEW STORE ILFORD NOW OPEN

Machine Mart

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Legs Kit for CTS10C & CTS10PLM ONLY £16.95 EX VAT £19.92 INC VAT

MODEL	MOTOR	BLADE	WAS INC VAT	EX VAT	INC VAT
CTS800B*	600w	200mm	~~£46.95~~	£33.95	£39.89
CTS10C*	1400w	254mm		£84.95	£99.82
CTS10PLM H/D	1525w	254mm	~~£164.44~~	£129.95	£152.69

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* Features TCT Blade

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- Tables tilt 0-45° left and right
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B=Bench mounted F=Floor standing

MODEL	WATTS/ SPEEDS	WAS INC VAT	EX VAT	INC VAT
CDP5DD	245/5	~~£39.89~~	£29.95	£35.19
CDP10B	245/5		£54.95	£64.57
CDP15B	300/5	~~£99.82~~	£79.95	£93.94
CDP20B	370/12	~~£135.70~~	£109.95	£129.19
CDP25F	370/12	~~£158.57~~	£129.95	£152.69
CDP30B	510/12		£139.95	£164.44
CDP35F	510/12	~~£176.19~~	£147.95	£173.84
CDP40B*	510/16		£159.95	£187.94
CDP45F*	510/16		£189.95	£223.19
CDP50F*	980/12		£379.95	£446.44

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* Includes wet 'T' slot table & worklight

Full range of Drill Vices available

Clarke CIRCULAR SAWS

DEWALT SKIL

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MODEL	DUTY	MOTOR (w)	EX VAT	INC VAT
Clarke CCS1	DIY	1200	£21.99	£25.84
Skil 5140HJ	DIY	500	£34.95	£41.07
Skil Orca	PRO	1500	£95.95	£112.74
Dewalt DW62	PRO	1150	£109.95	£129.19

Clarke SAW GUIDE

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CHT202

GREAT IDEA!

- Rule measures up to 550mm
- Mitres 0-70°, left and right

Clarke BELT/DISC SANDER

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CS4-6C

- Dust extraction facility
- 4" x 36" belt tilts & locks 0-90°
- 220mm x 155mm table, tilts 0-45°
- 440w, 230v motor

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REDUCED £149.95 EX VAT
£176.19 INC VAT
WAS £187.94 INC VAT

CS6-9C

SAVE £11.75

- Floor standing
- Belt 6"x48" long, tilts & locks 0-90°
- 190x317mm table, tilts & locks 0-45°
- 1Hp, 230v motor
- Dust extraction facility

Clarke BENCH GRINDERS

CBG8W features 8" wetstone & 6" drystone.

FROM ONLY £12.99 EX VAT
£15.26 INC VAT

MODEL	DUTY	WHEEL DIA.	EX VAT	INC VAT
CBG6RP	DIY	150mm	£12.99	£15.26
CBG6RZ	PRO	150mm	£18.95	£22.27
CBG6RSC	HD	150mm	£26.95	£31.67
CBG6RWC	HD	150mm	£29.95	£35.19
CBG8RSC	HD	200mm	£33.95	£39.89
CBG8VW	HD	200mm	£34.95	£41.07

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‡ REDUCED! CBG8W was £46.94 inc VAT

Clarke JIGSAWS

BOSCH Power Tools
BLACK & DECKER

FROM ONLY £10.95 EX VAT
£12.87 INC VAT

†4mm steel

MODEL	POWER	CUT DEPTH	EX VAT	INC VAT
Clarke CJS2*	420w	55mm	£10.95	£12.87
B&D KS633T*	400w	60mm	£24.95	£29.23
Bosch PST650E	450w	65mm†	£29.95	£35.19

REDUCED

*REDUCED CJS2 was £14.04 inc VAT B&D KS633T was £32.84 inc VAT

Clarke POWER PLANERS

FROM ONLY £16.95 EX VAT
£19.92 INC VAT

BOSCH Power Tools SKIL

- 82mm planning width on all models

MODEL	DUTY	POWER	EX VAT	INC VAT
Clarke CEP1	DIY	650w	£16.95	£19.92
Skil 1507HK	DIY	470w	£26.99	£31.71
Bosch PHO16-82	DIY	550w	£44.95	£52.82
Makita 1902	PRO	550w	£79.95	£93.94

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SKIL Makita BELT SANDERS

FROM ONLY £49.95 EX VAT
£58.69 INC VAT

- All models complete with dust bag

MODEL	MOTOR	M/MIN	EX VAT	INC VAT
Skil 1200HV*	600w	200	£49.95	£58.69
Makita 9911*	650w	75-270	£79.95	£93.94
Makita 9404"4"	1010w	210-440	£161.95	£190.29

* Dust Extraction facility

Clarke SANDERS

BLACK & DECKER
BOSCH Power Tools

FROM ONLY £11.49 EX VAT
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MODEL	POWER	PLATE	EX VAT	INC VAT
Orbital Sander				
CD400T	135w	90x187mm	£14.99	£17.61
CROS1	420w	125mm Ø	£19.95	£23.44
PEX400	400w	125mm Ø	£49.95	£58.69
Detail Sander				
CDS1	280w	90x90x90mm	£11.49	£13.50

Clarke COMPOUND MITRE SAWS

Makita DEWALT

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MASSIVE PRICE CUTS

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- For wood, plastic and light alloys
- All saws feature TCT blade

MODEL	BLADE	CUT DEPTH	EX VAT	INC VAT
Clarke CMS200	205mm	50mm	£29.95	£35.19
Clarke CMS251*	250mm	70mm	£59.95	£70.44
Clarke CMS254Pro*	254mm	76mm	£143.95	£169.14
Makita LS1040	260mm	90.5mm	£169.95	£199.69
DeWalt DW708	305mm	102mm	£585.00	£687.38

REDUCED

*REDUCED CMS254Pro was £176.19 ex VAT CMS251 was £82.19

Clarke DUST EXTRACTOR/ CHIP COLLECTOR

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CDE7B (left) • Powerful 1Hp, 230v motor • 500cfm collection capacity • Large bag volume

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£152.69 INC VAT
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SAVE £11.75

CDE35B
- 2ft³ collection bag
- 1hp, 230v motor • Can be wall mounted

*Hose extra ONLY £19.95 EX VAT £23.44 INC VAT

wolfcraft WORKBENCHES

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Versatile sawing tables, for use with circular saws, all jigsaws & routers*

MODEL	CIRCULAR SAWS (mm)	JIGSAWS	ROUTERS	EX VAT	INC VAT
6150-506	Up to 66	All jigsaws	Most	£49.95	£58.69
Variotec 66	Up to 66	All jigsaws	All	£79.95	£93.94
1000	Up to 66	All jigsaws	All#	£99.95	£117.44

*Professional Table #Ideally used in connection with parallel stop and curved milling guide (optional extra).

Clarke ROTARY TOOL SYSTEM

CRT40

REDUCED £25.50 EX VAT
£29.96 INC VAT
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Kit includes:
- Rotary tool • 1m flexible drive
- Height adjustable stand with clamp
- 40x accessories/consumables

MASSIVE PRICE CUTS

Clarke CORDLESS DRILLS

DEWALT HITACHI

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- All drills come with 2 batteries except DS14DVF and DV12DV (3 batteries)
- 10mm chuck on all drills except 13mm chuck on DS14DVF and DV18DV
- 1hr charge time, except DV14DV & DV18DV (50 mins)

MASSIVE PRICE CUTS

MODEL	TYPE	VOLTS	WAS INC VAT	EX VAT	INC VAT
CCD12T	Drill/driver	12v	~~£70.44~~	£49.95	£58.69
CCD18T	Drill/driver	18v	~~£82.19~~	£59.95	£70.44
DW927K2	Drill/driver	12v		£94.95	£111.57
DV12DV*	Combi/hammer	12v		£149.95	£176.19
DS14DVF#	Drill/driver	14.4v		£109.95	£129.19
DV14DV°	Combi/hammer	14.4v	~~£223.19~~	£159.95	£187.94
DV18DV°	Combi/hammer	18v	~~£276.07~~	£199.95	£234.94

REDUCED

* FREE 43 piece drill/driver set
# FREE 7 piece driver set
° FREE 112 piece drill/driver set

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Clarke SCROLL SAWS

FROM ONLY £64.95 EX VAT
£76.32 INC VAT

SAVE UP TO £11.75

MODEL	DEPTH OF CUT	THROAT DEPTH	WAS INC VAT	EX VAT	INC VAT
CSS16V	50mm	400mm	NEW	£64.95	£76.32
CSS18B	35mm	457mm	~~£93.94~~	£69.95	£82.19

REDUCED

Clarke CONTRACTORS SAW

CCS12

MASSIVE PRICE CUTS

REDUCED £129.95 EX VAT
£152.69 INC VAT
WAS £176.19 INC VAT

INCLUDES LONG LIFE TCT BLADE

SAVE OVER £23

- 1600w, 230v motor
- 2950rpm no load speed
- Max cut depth 90mm @90°
- 30mm bore diameter
- Full tilt up to 45° • Dust extraction facility

INCLUDES 795X400mm OUTFEED TABLE

freud 650MM WORKSHOP JIG

ONLY £94.95 EX VAT
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- For use on worktops up to 650mm wide
- 45° and 90° joints can be cut
- Works with Freud, DeWalt, Elu, Bosch, Makita and electric routers

Router not included

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DW738

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OPTIONAL STAND AVAILABLE: £49.95 EX VAT £58.69 INC VAT

- Powerful maintenance free, 1hp, induction motor
- Running speed 330/800rpm
- 155x310mm capacity
- Blade length 2095mm
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CBS12WV

REDUCED £89.95 EX VAT
£105.69 INC VAT
WAS £117.57 INC VAT

- Table tilts 0-45°
- Max throat depth 305mm

SAVE UP TO £5.88

MASSIVE PRICE CUTS

- Max depth of cut 80mm
- 500w motor

Clarke WOODWORKING LATHES

SAVE UP TO £11.75

MODEL	CTRE. TO CTRE. (mm)	TURNING CAP. (mm)	TURNING SPEEDS	EX VAT	INC VAT
CWL6B 20"†	508	242	4	£59.95	£70.44
CWL12D 37"	940	305	5	~~£89.95~~	~~£105.69~~
CWL20RV 36"*	900	305	10	~~£189.95~~	~~£223.19~~

REDUCED

*With reversible head & steel stand †Inc. 3pce chisel set

REDUCED! CWL6B was £82.19 inc VAT, CWL12D was £117.44 inc VAT CWL20RV was £233.83 inc VAT

freud DEWALT Clarke ROUTERS

BOSCH Power Tools

FROM ONLY £27.95 EX VAT
£32.84 INC VAT

*110v available

MODEL	MTR (w)	PLUNGE DEPTH	EX VAT	INC VAT
Clarke CR1	710	55mm	£27.95	£32.84
Bosch POF500A	500	52mm	£59.49	£69.90
DeWalt DW615*	900	0-55mm	£139.95	£164.44
Freud FT2000VCM*	1900	70mm	£159.95	£187.94

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Kit includes:
- SRT router table
- T3 router, 230v 1/4"
- 12 piece cutter set • Guide bush set

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- Powerful 1/3hp motor
- Range of chisels available

REDUCED CBM2 £99.95 EX VAT £117.44 INC VAT WAS £129.19 INC VAT

SAVE UP TO £11.75

MODEL	MAX MORTISE WIDTH	MAX WORKPIECE DEPTH (MM)	EX VAT	INC VAT
CBM1	3/8" (16mm)	111	£179.95	£211.44
CBM2	1/2" (13mm)	80	£99.95	£117.44

REDUCED

DEWALT PORTABLE THICKNESSER

DW733

ONLY £319.00 EX VAT
£374.83 INC VAT

- 1800w motor
- No load speed 10,000rpm
- Max. thicknesser cap. 152mm
- Feed rate 8M/min

Clarke SASH CRAMPS

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