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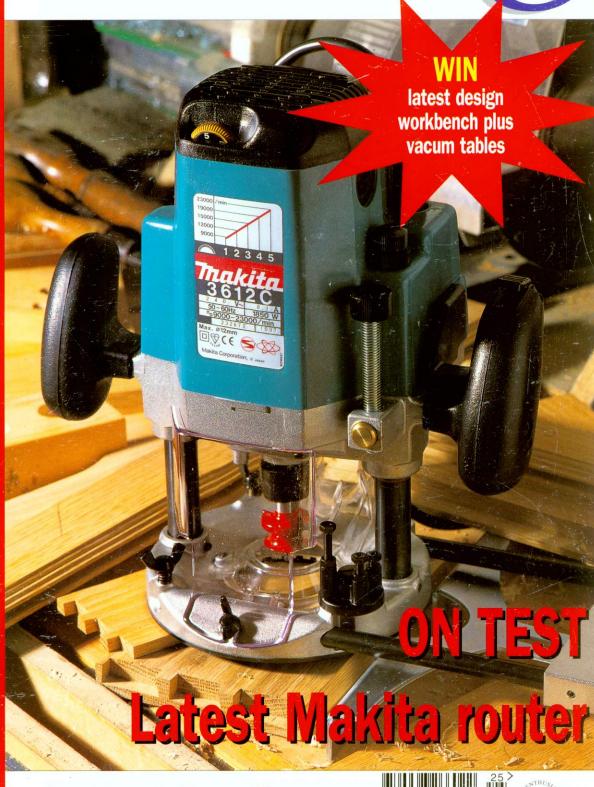


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Summer is fast approaching and with it the long school holidays. Parents will be under immense pressure to find things for the children to occupy their time.

To help, this issue is packed with useful projects for children of all ages. For the boy racers there is a truck to to rescue all the vehicles that will crash on our model car track.

The girls have not been left out. David Webster takes us through the stages for building a stable to house a fashionable doll's horse.

Don't forget, our International Woodworking Exhibition is fast approaching, check the details on page 44.

Peter Roper, Editor.

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Fax: 01322 667633 **EDITORIAL**

Editor

Peter Roper

Group Editor Mark Ramuz

Editorial Administrator Jenny Etheridge

PRODUCTION

Designer Siobhan Nolan

Illustrators Michael Lindley Peter Holland

Production Manager

Mike Burns

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SALES

Group Sales Manager Tina Cardy

Classified Ken Madden

Northern Area Sales Colin Walker

Thornley House, Carrington, Urmston, Manchester, M3 I 4DD Tel: 0161-776 4460 Fax: 0161-777 6524

MANAGEMENT

Divisional Managing Director Tony DeBell

Divisional Managing Editor Dawn Frosdick-Hopley

Divisional Sales Manager Roy Kemp

Group Marketing Manager

Newstrade Sales Manager David Pagendam

Circulation Manager

SUBSCRIPTIONS



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Stored and compact

Isaac Lord keep a range of compact disc storage products and have recently extended the selection to include storage racks for audio and VHS cassettes. The audio fitting holds 14 cassettes and the VHS fitting accommodates 10 cassettes.

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Further details from Isaac Lord Ltd., Unit 5, Desborough Industrial Park, Desborough Park Road, High Wycombe HP12 3BX. Tel: 01494 459191.

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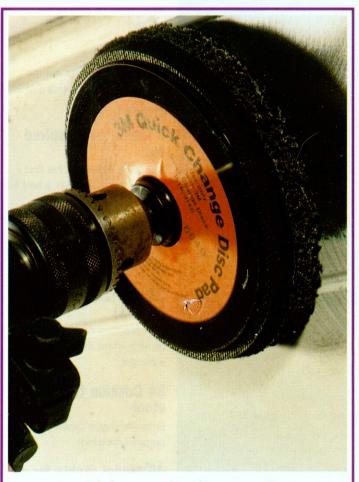
The KS250 crosscut and mitre saw features a head that tilts 3x 45 degrees, a large cast aluminium table turning within a range of 45 degrees from left to right, a powerful 1800w motor and strong clamp for fixing to work benches. Price is £231 ex VAT.

Making a joint

A Woodworker's Guide to Joints is the latest book by Jim Kingshott. It starts with guidance on machine and hand tools, techniques and the workshop going on to focus on the basic types of joints, using step-by-step instructions, exploded diagrams and colour photographs.

Advice is given on the choice of joint for the job in hand, along with detailed information on marking out, cutting, assembly and gluing up.

Price is £15.99. Further details from B.T. Batsford, 583 Fulham Road, London SW6 5BY. Tel: 0171 471 1100.



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inspired cot



y wife was forever calling me a 'paper engineer', rather than the real thing (for reasons I'm too embarrassed to divulge here), so two and half years ago I made a conscious decision to learn a new skill, preferably doing something with my hands. Woodworking it would be! So without lessons or guidance, except a couple of excellent books, I purchased the basic tools and made my first two projects.

More recently my wife returned to Scotland for several months in order to have our first baby (Emma) whilst I remained at work in Oman. I wanted to 'contribute' and so decided to design and build a high quality, teak cot/bed as a suitable project to fill my spare time in my wife's absence.

DESIGN

I bought a mattress and the cot/bed was designed around it. The design criteria I decided upon were:

A cot bed, rather than just a cot. i.e. a larger than normal

mattress (size 1.4m x 0.7m)

Removable side, so it could be used as a normal bed by a child.

No unsightly channels or bolt holes to be visible after the sides had been removed.

Decoration: Charles Rennie Mackintosh theme to maintain a Scottish connection.

Longevity: A high quality product, built to last!

Safety: Compliant with the relevant British Standards.

The detailed design was done on scraps of paper which got lost with alarming regularity. There was plenty of scope for modifications 'on the fly'.

In view of the number of joints to be cut for this project, I decided a router would be required. I invested in the best router I could afford, the Makita 3600BR. 1500W may sound a little excessive, but I came to appreciate the ample power over the term of the project. The router was fantastic. It proved to be extremely versatile.

I bought a copy of 'Routing' (Issue 18) specifically for the feature on freehand relief carving by Ben Russell. I decided this was the type of decoration I

For the children



Phil Cliffe describes his first experience of routing















PICS FROM LEFT TO RIGHT, TOP TO BOTTOM

Four mortise and tenons hold each corner

Side members joined with mortise and tenon

Ends and sides being assembled

Cutting slots for the bottom slates

Slats are made from teak

Bottom section assembled

Bottom into position

wanted to achieve in some form on my cot design! About the same time I selected the Charles Rennie Mackintosh rose stencil to establish the Scottish theme.

Oman has fair availability of wood and I selected Burmese teak for its workability, longevity finish and also value for money



Hardest part of side asembly was marking the large radius curve

(in this part of the world).

CONSTRUCTION

Each pair of corner posts is linked by an end board of solid teak with the grain orientated horizontally. Three individual sheets of teak were joined edge to edge using biscuit joints to form the solid build. Four mortise and tenons were used to hold each corner post firmly joined to the end-boards. Although excessive for strength, they were a precaution to prevent warp or bowing in the end-boards. The side members were also joined to the corner posts using mortise and tenons . All joints were cut using the router. This formed the main load-bearing frame.

The bottom slats on which the mattress finally rests were countersunk into two thin lengths of teak. This was constructed and then fitted in between the side members on the main



Side slats are secured with mortise and tenon joints



Self designed brass brackets



Upper brackets are designed to resist lateral loads

frame. The side members take all the load.

The side slatted restraints were also constructed as a sub assembly. Mortise and tenons were used at the top and bottom of each slat. The hardest part of this assembly was marking out the large radius curve on the underside of each side member -tape the wood to the floor; tie a pencil to one end of a piece of string, the other anchored to a desk on the opposite side of the room. Scribe the arc once an appropriate radius is established (about 4m)

Learning to use the router for joint cutting, chamfering and even relief carving was not as difficult as I imagined. What was surprising to me was how antisocial woodworking has become. Friends did not drop by to see how the cot was progressing often I did not even hear them call and if I did, they left shortly after with a choking cough from all the dust. Another new sensation was fatigue due to the dust, noise and vibration! I wore full protective gear, making the whole experience a hot and sweaty one as well.

As per British Standards, there should be no sharp edges - everything was chamfered.

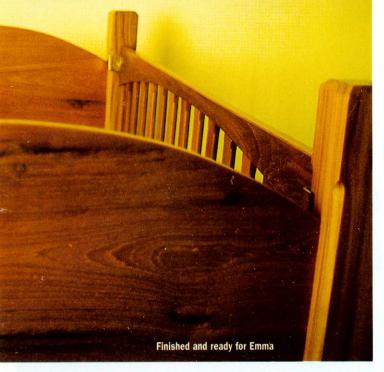
It sounds so simple as I write it down that I really wonder where all my time was spent. The cutting of the wood took only a small fraction of the total time as the router proved to be such a powerful and efficient tool. The majority of the time was spent in marking out prior to cutting - I became almost fanatical, double checking all measurements, identifying the waste and setting up the router. The reason for this being, the powerful router cuts with such alarming ease, it is frightening how quickly mistakes could be made.

FIXTURES: SIDES TO MAIN FRAME

The fixing of the side restraints to the main-frame is temporary,



the dust brushed away the whole carving comes into view



such that when Emma is old enough, the sides can be removed and the cot/bed used in 'bed' mode. I designed two brass brackets; the lower four brackets are all of the same design and support the weight of the sides and with inserts/brass bolts, anchor the sides so they are fixed in the vertical and horizontal plane (as you look at them). The upper four brackets are fixed to the sides using inserts/bolts, but there is no

locking to the corner posts.
Instead it sits as a close fitting channel, designed only to prevent lateral loads (movement in/out of the page).

The sides do not move up and down, but after a little market research I decided this was not required - very few people that I spoke to actually use them even when they are fitted to their cots.

To remove the sides of the cot, undo the lower bolts which fit through the brackets into the inserts in the inside edge of the lower frame, now slide the side upwards such that the upper brackets moves above the tops of the corner posts. The inserts for the lower brackets are on the inside edge and the top brackets are not bolted to any part of the frame - I have achieved my objective of having 'no unsightly channels or bolt holes to be visible'.

FREEHAND RELIEF CARVING

Freehand relief carving was approached with apprehension. I saved it till last in order to build up maximum router experience prior to attempting what I considered to be the hardest part of the project. Initial trials were horrid, despite the excellent guidance in the books and Routing magazine. Things did improve and I think the two biggest factors responsible for this improvement were:

(1) Ensure you invest time in going over your pencil line with a

sharp knife prior to routing. The swarf acts as a good indicator on the cutter proximity to the line and

(2) When moving the router use only your finger-tips around the guide base, forget the handles. The elephant ear handles are of no use whilst carving.

When cutting the Charles Rennie Mackintosh rose my focus was intense on the small area being cut. It was only when I switched off the router and brushed away the swarf I got an overview of the whole carving (Fig. 16). Mistakes did occur, but these were small in comparison to the whole and certainly insignificant when standing back to view the complete work, My message is, do not be put off relief carving, for a little practice and concentration, the results can be impressive!

Since I lacked 20 years of chisel carving experience, it was always my intention to reduce clean-up chiselling to a minimum. I therefore used the router far longer than I initially thought to clean-up the carving to ensure this.

FINISHING

Finishing has to be non-lead due to the risk of contact with the baby. A clear matt varnish satisfied this criteria and showed the teak wood grain to best advantage. Three coats were applied to all pieces prior to

Charles Rennie Mackintosh rose



gluing and final assembly. In between coats very fine wire wool was used to smooth out any irregularities. The most difficult items to glue together were the side slatted restraints, which were constructed out of 17 pieces of wood and 30 mortise and tenons. A major time pressure to get all the joints wetted, squeezed into place and clamped before the glue started to cure!

I am very pleased with the end product. My friends are amazed that I've actually finished it, (I've persevered through what seems an age of heckling and abuse from them!), my wife actually cried when she saw the completed cot on her return from the UK (probably just the hormones) and baby Emma, well she's still ignorant of what her Dad's been up to for the last few months, but once she can read I'll show her this article!

Section of relief carving



When carving concentrate on a small area at a time





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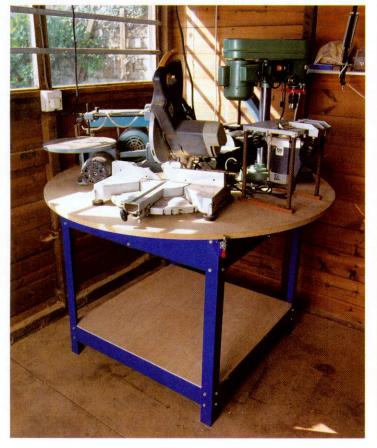
One lucky reader will win this brand new product that is not yet available in any retail outlets. It is only available by direct mail from the designer and manufacturer, Sutton Precision Ltd., of Sutton, Ely, Cambs.

Featuring an 18mm thick MDF circular top it only occupies 1.2m of floor area. The top is sufficient to permanently mount six typical pieces of woodworking equipment. It then rotates to allow the selected machine to be used fully and safely.

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The unit is completely maintenance free and has a hardwearing nylon bush in the centre for trouble-free movement and nylon wheels to help prevent the top from sagging under the weight of the machinery. The rotating table is supplied flat packed.

Cost is £195 including delivery and VAT.



Winners of the Trend 4-piece cutter sets

published in Issue 22

Mr. R. A. Andrew, Windermere, Cumbria.
Anthony P. Harding, Castleknock, Dublin.
Mr. G. S. Hicks, Falmouth, Cornwall.
Margaret Hudson, Penzance, Cornwall.
Mr. D. Moore, Water Orton, Birmingham.
Gareth Morgan, Stockport, Cheshire.
David Oxenbridge, Auckland, New Zealand.
Mr. A. V. Rolfe, Romford, Essex.
Miss Henrietta Rose, Liss, Hampshire.
Paul Sutch, Stone, Staffs.

How to enter

Just pop your name and address on a postcard or sealed envelope and send it to:

Sutton Table Competition, Routing 25, Nexus Media Ltd., Nexus House, Azalea Drive, Swanley, Kent. BR8 8HU.

Only one entry per reader will be entered into the draw.

Closing date for entries is 31st July 1998

The first correct entry pulled from the hat on that day will be judged to be the winner of the Rotating table.

The winner will be notified by post after the draw and the name will be published in a future edition of the magazine.



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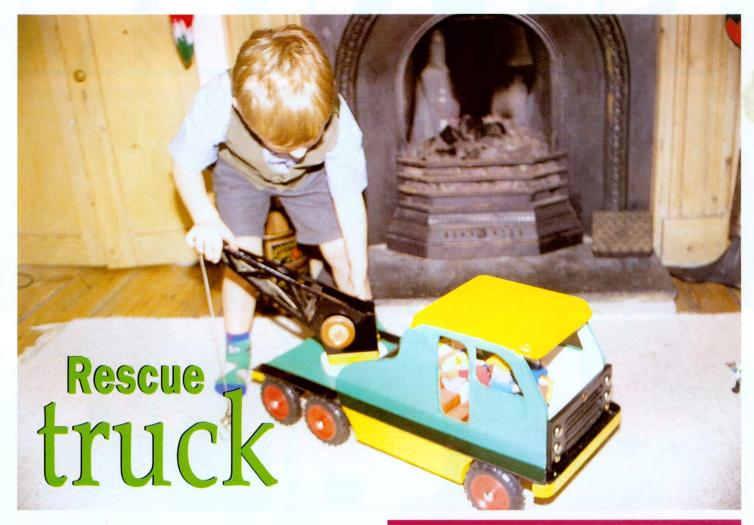
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Nothing gives more fun to a small boy than a toy crane and this Jack Hudson design is a real winnner

he model illustrated here was made to be painted, using bright acrylic paints, but there is no reason why you should not make it out of well-chosen wooden scraps and figured plywood to display the natural beauty and colours of the different timbers, finished with a clear varnish. The natural wood finish makes a very distinctive toy, but for the painted version I used plain MDF board.

Make the truck as simple or as complicated as you wish. My designs are made to be played with, and, although correctly proportioned, they are not scale models. Children always dress their toys up from their own vivid imaginations, which is why strong and simple toys like this are so much preferred to minutely accurate plastic models.

I have added a touch of realism and fun with the little folk. Their car has broken down and Mum, Dad and the kids are sitting in the passengers cab looking glum. These are surprisingly easy to make and I give instructions elsewhere. (See 'Little People' at end).

A few thoughts on design

The size of the toy is determined by the wheels that are available. Using 102mm (4in.) diameter plastic tractor wheels produces quite a large lorry - 645mm long by 260mm wide standing about 380mm high (25 3/8 x 10 1/4 x 15in.). This is not too big for a tough crane lorry that is going to do a lot of outdoor work. If you

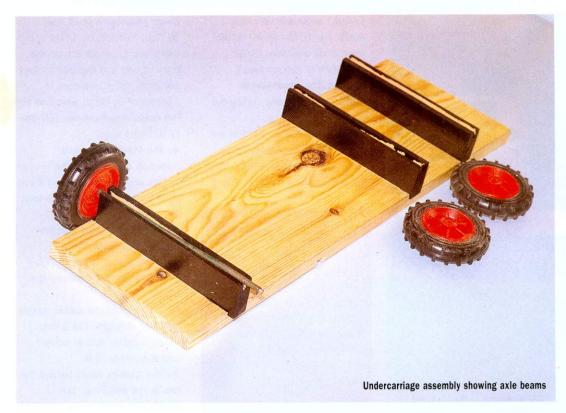
For The Children



would prefer to make it smaller you could use 75mm (3in.) diameter heavy duty G. H. wheels and this would reduce the finished toy to 484 x 195 x about 285mm high (19 x 7 3/4 x 11 1/4in.). If you decide to make the smaller model multiply all the dimensions given here by 0.75 to make the truck three-quarter size. (e.g. 645mm x 0.75mm = 484mm).

The whole question of fixing axles to toy trucks is worth considering. Obviously a crude backyard method of hammering in U-shaped staples is an easy solution, but little lads are very

destructive and it is doubtful if this method will last very long. The router offers the perfect solution. The hardwood axle beams have a chase, or groove worked centrally along the length into which the axle will drop. The axles are 6mm (1/4in.) diameter and a straight fluted 6.3mm (1/4in.) cutter set to rout a 10mm deep chase is ideal. This is easier than trying to end-drill a long hole into the axle beam for the axle rod and the slot locates the axle firmly. The axles are drilled 1/8in. and countersunk crosswise to accept No. 4 x 3/4in. steel countersink



Tools

Router and/or router table Router cutters Tape measure, square etc. Screwdriver and bradawl Plug cutter and screw set Scroll saw, fretsaw or jigsaw can use stub axles instead of making them the full width. Chases are also routed on the underside of the baseboard to locate the fix and axle beams accurately and firmly when glued in position.

The Chassis

1. The truck is based upon a plank

about small differences in metric amd imperial sizes. Make sure that everything is either metric or imperial, including your drills. It is best to buy wheels, axle rods, washers and clips from the same supplier to ensure compatibility.

4. Cut the bright mild steel axle rod to lengths. The hubs of the 102mm

(4in.) wheels are about 30mm and so allowing for washers on either side of the wheels and for the 1/4in. domed axle clips and a bit of play, make the axle rods project about 37mm (1 1/2ins.) beyond the axle beams. Full width axle rods need to be 280mm long (11ins).

NOTE: Wheels and axles are supplied in imperial measure and if bought by post you may find that they only supply 510mm (20in.) lengths of rod and you cannot get two axles out of one length!. This length can be cut into six pieces 84mm (3 1/4in.) long to make stub axles which are quite satisfactory.

5. Rout transverse grooves 5mm deep across the underside of the base board to hold the axle beams in the correct positions. Set them out square and true and drill for the woodscrews. Screw and glue the axle beams direct to the base.

The cab

The cross members are housed in chases to make a strong and simple box construction.

1. Cut both sides out of a piece of 9mm (3/8in.) MDF or plywood. The two sides will come out of one piece 670 x 185mm (26 3/8 x 7

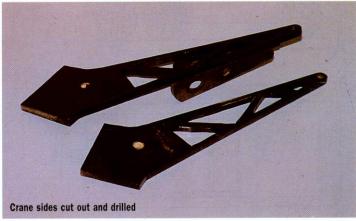


woodscrews to secure the axle to the beam. Some workers might like to cap the axle slot with a batten making it like a long-drilled hole.

It is advisable to use a pillar drill for the transverse holes in the axle rods and use a centre punch to start the drill. This makes a strong and accurate location for the axles. If you wish to save on axle rod you of softwood, $620 \times 196 \times 20$ mm ($24 \times 7 \ 3/4 \times 3/4$ in.). This makes for strength and simplicity of construction. The illustrations also show the finished vehicle.

2. Prepare the hardwood axle beams as described above. Make the length of the axle beams a little greater than the base board, say 206mm (8ins) long.

3. As ever - one has to be careful









General views of the truck and little people without cab roof and one side

1/4ins.) and leave very little waste. For the varnished natural wood truck use 9mm (3/8in.) mahogany or gaboon faced plywood. The dimensioned drawing should make setting out easy.

2. Drill holes for the window and door cut-outs to allow the saw blade to be entered and cut them out with either a hand fretsaw, a

TIP

It is well worth investing in a screw-sink and plug-cutter for No. 8 size screws. The set will cost you about £10. or a little more, but you will be able to sink screws in and cap them off with plugs cut from the same wood to make a very neat job. When using screw-and glue construction the steel screws pull the work up really firmly and the plugs hide the screws.

power jigsaw or a scroll saw.

3. Rout half-depth chases in the cab sides to locate the scuttle, back of cab and the rear toolbox partition. The baseboard is 196mm (7 3/4ins.) wide and so the cross members are 187mm (7 3/8ins.) wide.

4. The front scuttle is a softwood off-cut from the baseboard and looks good if you chamfer off the top face to look like an instrument panel.

5. The driver's seat and the passengers' seat are just pieces of scrap, 178mm (7in.) long, fitted tightly between the sides.

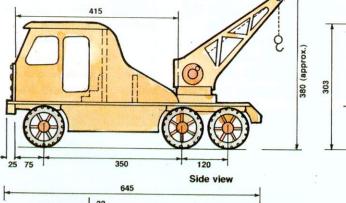
6. The back of the cab is 12mm thick for strength. Cut a rear window, either oval or square and it is ready to fit.

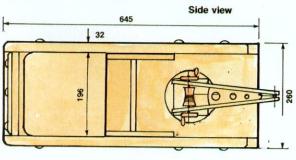
7. The toolbox cavity behind the cab is not essential, but provides another cross strut for strength and is chased into the sides. It also adds to the fun because bits and blocks can be carried there.

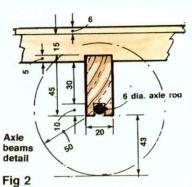
8. A piece of softwood 25 x 20mm (1 x 1 1/4in.) makes the front bumper and this will carry the mudguard strips and the radiator grille.

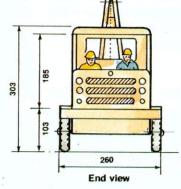
9. Make the radiator grille. This is fixed over a piece of expanded metal mesh to the front of the scuttle. It carries the headlamps and sidelamps made from chromium/brass upholstery domes or nails.

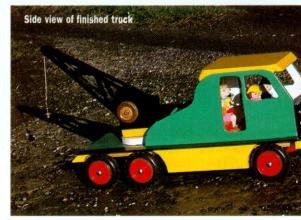
10. Two mudguard supports are screwed and glued between the wheels to the main baseboard. They look like the toolboxes carried on the sides











of the vehicles of this type, but they provide the vital supports for the thin hardboard mudguard strips. Small offcut pieces may be shaped to carry the mudguards at the rear of the truck.

The Crane

This is easier to make than may at first appear. Two sides are fretted out of 9mm MDF (or 3/8in. plywood) made to taper in at the top and a short piece of 6mm rod forms the top pulley.

- 1. Mark out the crane sides on a piece of 9mm (3/8in.) MDF/ply as shown. On the rectangle the 40 degree triangle can either be set with a protractor, or by using the dimensions given. It is not that critical.
- **2.** The girder pattern looks good, but if you do not wish to do the fret-sawing the sides may be left solid. Alternatively holes of reducing diameters can be drilled to make it look lighter.
- **3.** Put the two sides together and drill the top hole for the short piece of 6mm (1/4in.) rod that will act as the top pulley. Drill the crank spindle holes.
- **4.** Make the crane block out of 90 x 90 x 20mm (3 1/2 x 3 1/2 x 3/4in.) MDF/plywood.
- **5.** With the top pulley rod in position stand the two sides on the crane base block and carefully mark their position when they are splayed out to the block width. Rout a pair of grooves to house the crane sides.
- **6.** Set up the crane dry and cut a cardboard template to get the correct angle for the top and bottom splay stiffeners, which are

Rescue Truck Cutting List

Item	No.	Le	ngth	Wi	dth	Thic	kness	Material
		mm	ins.	mm	ins.	mm	ins.	
Base board	1	620	24	196	73/4	20	3/4	softwood
Axle beams Sides -	3	206	101/4	45	13/4	20	3/4	hardwood
two out of	1	670	263/8	185	71/4	9	3/8	MDF/ply
Front scuttle	1	187	73/8	80	31/4	20	3/4	softwood
Driver's seat Passenger	1	178	7	40	1 ⁵ /8	20	3/4	softwood
seat block	1	178	7	65	21/2	65	2 1/2	softwood
Cab back Rear toolbox	1	187	73/8	180	71/8	12	1/2	MDF
partition Side mudguard	1	187	73/8	70	23/4	9	3/8	MDF
supports Rear mudguard	2	305	12	65	21/2	20	3/4	softwood
supports	2	60	23/8	60	23/8	20	3/4	softwood
Mudguards	2	625	245/8	32	11/4	3		hardboard
Front bumper	1	262	101/4	25	1	20	3/4	hardboard
Radiator Grille	1	198	73/4	85	33/8	9	3/8	Ply/MDF
Cab roof	1	225	87/8	192	71/2	20	3/4	MDF
Crane base	1	120	43/4	120	4 33/4	20	3/4	MDF
Crane block Crane sides/	1	90	31/2	90	31/2	20	3/4	softwood
stiffeners from	1	415	163/8	252	10	9	3/8	MDF
Crank wheels * Little folk -	1	80	31/4	60	23/8	60	2 ³ /8	hardwood
out of +	1	300	12	180	7	20	3/4	softwood

- * Make the crane crank on the lathe or out of steel rod.
- + Little folk out of softwood scraps (See filler at end)

Materials

6 No. 100mm (4ins) plastic Tractor Wheels or 75mm (3ins.) wheels for three-quarter size model. 3 No. 277mm (11ins.) lengths of 6mm (1/4in.) rod - or for economy 6 No. 100mm (4in.) stub axles

12 No. 6mm washers and 6 No. chrome dome axle clips.

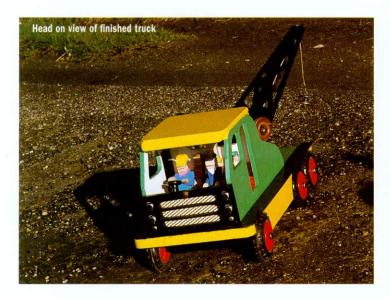
4 No. 20mm (3/4in.) chrome domes and 4 No. brass-headed upholstery nails.

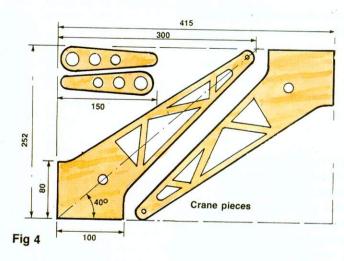
Crane hook, can be made from wire and fishing weight.

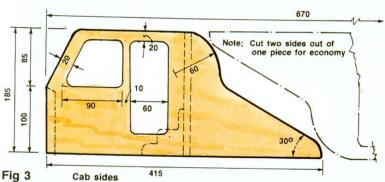
Colours, varnish and glue.

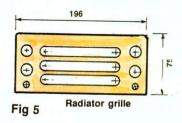


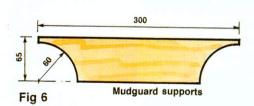












cut from the offcuts of the sheet used at 1. above.

7. The crank for winding up the crane hook is best made by turning it on the lathe. If you do not have a lathe use a cotton reel, or a piece of thick dowel. I made a drum on the lathe and turned 12mm (1/2in.) spindles at each end to go through the crane sides. The cranks on the drum can be two 60mm (2 1/4ins.) diameter discs of 19mm (3/4in.) plywood with little handles. Use

your own ingenuity, or an old piece of Meccano, - whatever you find easiest. Because of the taper-in of the crane sides you will need washers on the crank and drum.

8. Make the crane hook out of oddments. The one shown here was an old brass poker knob with a hook formed from a coat hanger wire. The hook must be sufficiently weighted to hang nicely and a round lead fishing weight might be used.

Finishing

Clean up all edges. A roundingover cutter in the router is invaluable for cleaning up toys and a bit of hand sanding makes sure there are no splinters.

Natural wood toys always look good, especially if care is taken to select attractively figured and colour pieces. For the finish use a modern resin varnish such as Rustin's Plastic Coating which is very durable and also available in black and white. The axle beams and crane look well if they are coloured black to contrast with the natural woods.

If you decide to make the painted model illustrated here it is a good idea to do as much of the painting as you can before

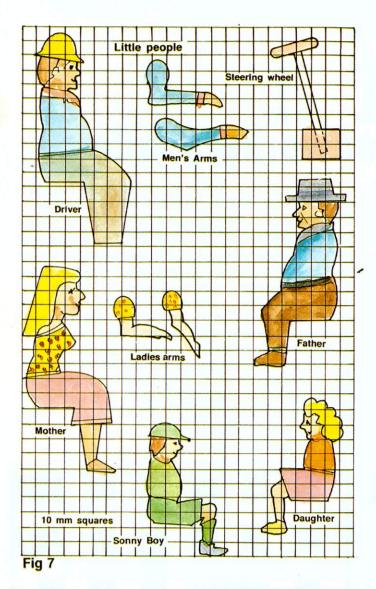
assembly. Use non-toxic acrylic colours that conform to BSS 5665 - EN71/3 toy Safety Regulations 1989 and these may be made much more durable if they are coated with a resin varnish such as that mentioned above.

It pays to make all the parts first, like a kit, before assembly. Use a good glue, such as Aerolite 306 or Titebond. I recommend these adhesives from direct personal experience and they never let me down, but there are many similar glues on the market including the Evostick range. Where you have used wood screws sink them in and plug the holes.

After assembly check around and touch up where necessary and fit the wheels. Use a fine cord line for the crane.



Close up of little people



Suppliers

Axminster Power Tool Centre, Chard Street, Axminster, Devon. FX1.3 5DX.

Tel: 01297 33656

Boddy's, Boroughbridge, North Yorkshire. YO5 9LJ.

Tel: 01423 322370

Craft Supplies Ltd., Miller's Dale, Buxton, Derbyshire. SK17 8SN.

Tel: 01298 871636

Wheels etc. from

K-Toys, Westfield Trading Estate, Midsomer Norton, Bath. BA3 4BH.

Tel: 01761 411299

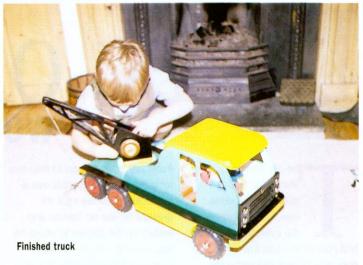
ZIG woodcraft markers available from

BHMA Ltd., Unit 1 Field Gate, Sutton, Cambs. CB6 2NT.

Tel: 01353 776305

Chris-a-Liz, 85/86 New Road, Kidderminster, Worc., DY10 1AE.

Tel: 01562 825466



Little People

It is so easy to make little figures to go with any toys that you make, or just for fun. The rescue truck described above looks so much better when a few little figures bring it to life. The joy of making them is increased because you can never be quite sure how they will turn out. Just a slight change in the silhouette, or a touch or two of the pen can make them look ecstatic or really grumpy.

For example, I show here the unhappy family whose car has broken down and the hard breakdown truck driver who is taking them home. The scale has to be about right for the toy you are making. Taking a piece of card to begin with and try out a few cutouts and test them for size against your model.

The proportions of the human frame are given in student's drawing books and you should respect the rules, but just as a cartoon figure is different from an oil painting so these manikins differ from sculpture. The human body is seven-and-a-half heads tall. Even more important is to get the head and face right. A good rule is to put the eyes halfway between the crown and chin. From the top of the head to the eyebrows is one third of the head and the underside of the nose is two-thirds down.

These figures are silhouettes and the busky squareness of the sawn wood is what makes them so exciting. This is fretsaw work. Not so long ago we would have used a hand-held fretsaw and cut them out laboriously, or used a foot-treadle machine. Now we have the powered scroll saw, the ideal tool for this work. The hand-held power jigsaw is not so easy to use for the fine cutting out, unless it is inverted in a special table.

The beauty of this skill is that it is all throw-away. You can take any old bits of scrap, about 19mm (3/4in.) thick and play around. I use sea-bleached bits of driftwood, or plywood and if the little figure looks wrong I bin it and start again.

The natural figuring in driftwood is very exciting, but you can colour the little people if you wish. White household emulsion paint can be given any colour you like with dyes, or you can buy cheap artists acrylic paints, or even use glossy paints. I recommend the felt colouring pens for wood that are available in a range of colours and nibs.

After fretting out the crude shapes it is amazing how quickly they come to life with a few touches of colour. It is not necessary, indeed it may even be better not to do too much rounding-off, with sanding discs etc.

Diary of a woodworkers wife

he day was going quite well really. All that needed to be done now was to prepare the evening meal in the half hour or so I had free while the baby was asleep. Out came the saucepans, vegetables and the utensils and it was all systems go or so I thought. You see, I made the fateful mistake of looking up the garden where I knew my husband was making an oak table for somebody. He must have been trying to catch my attention for some time because as soon as he saw me he started waving

frantically asking if I could help him for a few minutes. As this was a particularly cold day I got all dressed up like an Eskimo and walked up the garden to where he was working. I might not have explained this previously, but at home I am affectionately known as 'Donna Hindrance' because whenever I try to help things go wrong and the job takes twice as long as it would without my help. Well, today was no exception. As soon as I approached the router stopped in the middle of cutting the edge of the table and I hadn't so much as looked at it. Silence fell. I

tentatively suggested that it may be the fuse that had blown. Apparently it wasn't, it was the switch getting clogged with sawdust as this particular model is prone to do so. Being convinced it was my fault I offer a hot drink to thaw us both out. While I am doing this, newspaper is placed on the kitchen table and before I know it the router is in pieces being cleaned and lovingly put together. I say lovingly because this has been a favourite and much used tool for the past ten years. Still it wouldn't work. Silence fell once again and very quietly I heard him say that maybe it would

be worth checking the fuse after all. After pinching the fuse out of the kettle, he tries again. The machine bursts into life. I was beside myself with excitement, as for once, I had been right and I wasn't going to let him forget it! Not for a while anyway. Mind you, he got his own back as when I had finished helping him rout the edge I was covered in wood chip from top to toe and looked like something the rabbits would have liked to nestle down in. Needless to say, by the time I got back in it was too late to cook tea!

Donna

Prize Crossword No.1

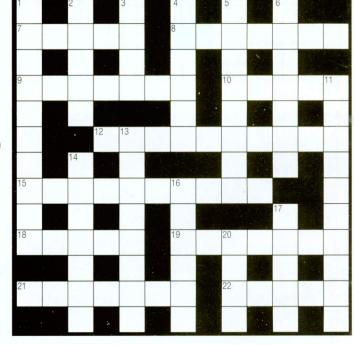
CLUES ACROSS

- 7 Nature of deployment of tool (5)
- 8 Check and test (7)
- 9 Most neat (7)
- 10 Took a decision on stage? (5)
- 12 Bases through which spindles point (4,6)
- 15 See 2 Down
- 8 0.1 measurement (5)
- 19 Off-colour since it isn't a water-
- source? (3,4)
- 21 Cut short restructured rail cut (7)
- 22 Bring on oneself as in debt (5)

CLUES DOWN

1 Motor failing when working round a template? (7,3)

- 2 & 15 Across Be frank! Spread pack where we eat (5,2,3,5)
- 3 This spot, only for the beer! (4)
- 4 Lament alteration it's in the mind (6)
- 5 Precisely level with (8)
- 6 Tell exactly what position will be (7)
- 11 New drill sites for the whisky makers (10)
- 13 Above like mounted industrial router? (8)
- 14 Rest son, otherwise they throw rocks at you! (7)
- 16 Chap ran about and getting on a bit (6)
- 17 Attachment for grooving around the garden? (5)
 20 Fit to cut? (4)





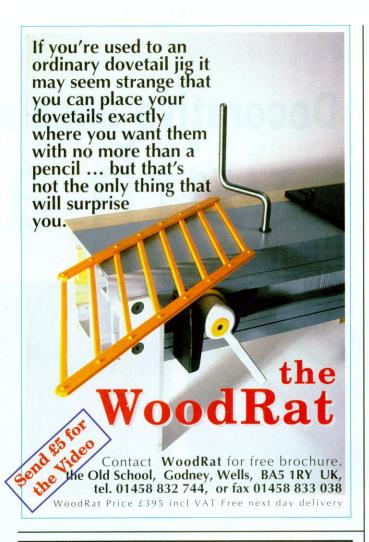
The sender of the first correct entry drawn, will receive a cheque worth £50.00 courtesy of Routing magazine.

Closing date is: 13th August, 1998

Send entries to: Crossword No. 1, Routing, Nexus House, Azalea Drive, Swanley, Kent BR8 8HY.

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Around The Home



Decorative panels With a



David Ford describes the method for producing unique home improvement decorations

ecorative panels make a room special as the photographs show. The decoration can be added to doors, arches, or just decoration built into a woodworking scheme to add interest.

The method of production is the same in all cases.

1. Draw out the pattern, taking a great deal of care that the dimensions fit the panel space perfectly. The patterns are my own designs, but I have found wrought iron work and pictures of the interior and exterior of churches a fruitful source of ideas

Template for curved section



- 2. The pattern is divided into a series of parts. Each section of the pattern is divided into 8 parts, i.e. 2 left and 2 right curves, 2 short horizontals and 2 verticals and each of these parts are separately made. The straight parts are cut on a circular saw and the verticals have coves routed along their edges, while the horizontals remain plain.
- 3. I then cut a template for the curved section out of 18mm plywood. It is initially cut by fretsaw and then filed and sanded to give the desired shape. I have found that slight imperfections, such as a gap, can be corrected by the addition of car filler paste which is then sanded.

Using the template as a guide draw shape onto plywood



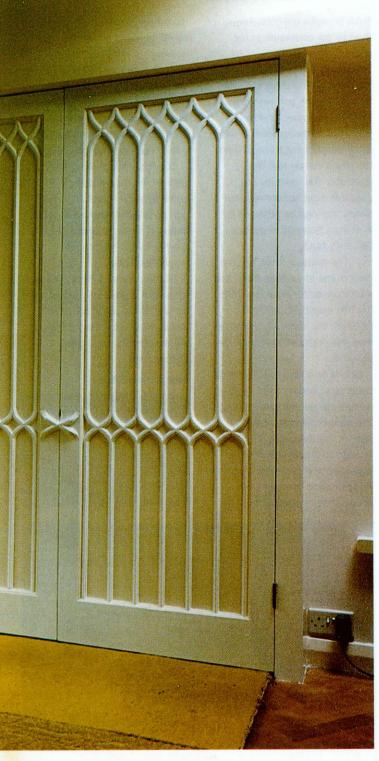
- 4. Using the template as a guide I draw the curved shape onto 9mm plywood and then cut out the rough shape using a fretsaw.
- 5. Two holes are drilled in the template and also identically positioned holes drilled in the rough cut plywood, so that the plywood can be bolted above the template onto a smooth sheet of chipboard.
- 6. The fixing I have used on the chipboard are 4B.A. nuts fixed to a small plate which is screwed into the chipboard (viewing the nuts both from above and below), but these are not readily available, so I have experimented with an alternative idea of using

Two holes drilled into template and rough cut plywood



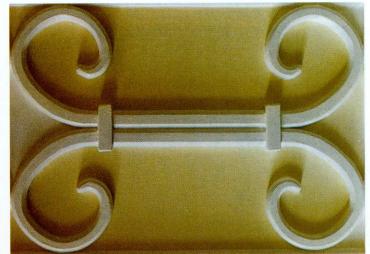


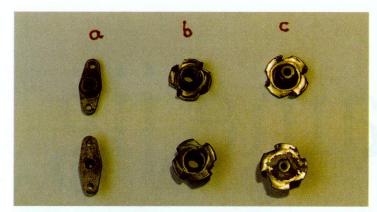
pivot frame jig





An example of the pattern

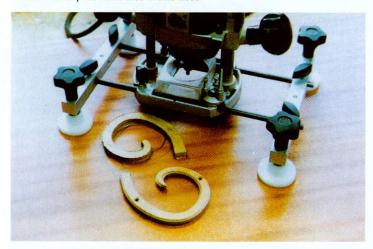




Fixing nuts



Router fixed to pivot frame used in skid mode



Add a coved edge using pin guided cutter



Parts primed and grain filled



Parts fixed to the panel by veneer pins

6mm pronged tee-nuts. These are fixed to the underside of the board

However the central holes of the 6mm tee-nuts are too large for most of the pattern work I attempt, so I have Araldited a 6B.A. nut to the underside with a 6B.A. screw fixing through both the rough cut ply and the template. The tee-nuts are available from some hardware shops, but can be obtained by mail from Screwfix telephone 0500 414141.

7. The router is fixed up with a pivot frame in its skid mode and a trimmer cutter inserted. With the ball bearing touching the template the surplus is removed from the edges of the rough cut ply curve.

8. The final operation on each curve is to add a coved edge using a pin guided cove cutter. The curved plywood, this time without the template, is bolted through to the chipboard base and again using the pivot frame in its skid mode the coves are added. At this stage it must be

remembered to add the coving to equal numbers of left and right curves.

9. Prior to fitting to a panel, the various parts for making the pattern are primed and grain filled and the bolt holes filed with Polyfilla and similarly the panel base is primed and grain filled.

10. The parts making the pattern are then fixed to the panel by veneer pins (like very thin panel pins) and small gaps between sections of the pattern are filled with Polyfilla and carefully sanded.

11. The panel is finally painted. I tried out a great number of paint combinations using the paint tester pots, but finally settled on the colours shown in the photographs.

Final choice of colours





Experimenting with paint combinations

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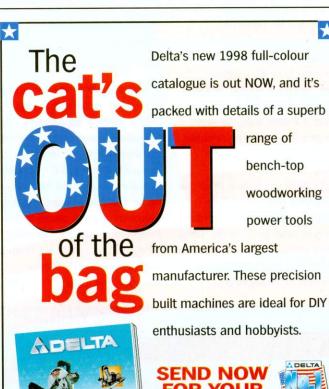


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Around the workshop



Wood dust particles so fine they can't be seen are harmful to your health. Zachary Taylor reports on the new Compact air cleaner that might solve the problem

icroclene 400 and 1200 are ambient aircleaners by Faron Enterprises Ltd., developed by Robot, well-known for their chucks and turning accessories. Aimed at small and large workshops, for either the amateur or industry, the machines have been received with what must be a sigh of relief. Faron's customer research identified a need for a slightly different model, thus the new Compact has just been released.

FINE FILTERS

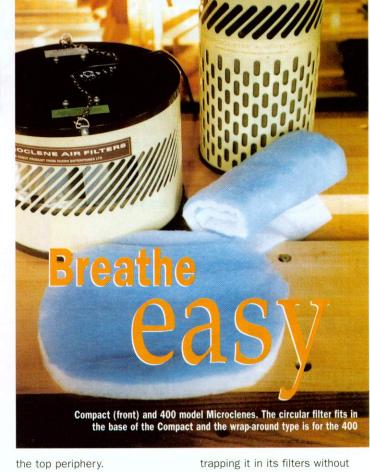
Most significant feature of all the Microclene products is their capacity to remove airborne dust particles down to 1 micron. Longlasting filters, with an estimate of around 200 hours continuous use between changes are

efficient and economic.

Filters for the Microclene are now improved in that they come with a combination of two layers, the outer one to remove coarse dust and the inner one for fine particles. After some hours operation the filters remove as low as 0.5 micron. A convincing effort towards healthier workshops.

HANG IT

Intended to be hung over or near a machine, or for that matter, over a bench if sanding or other operations are being performed, the Compact is just that compact. It still has the familiar cylindrical look of the Microclene range, but it is shorter, allowing overhead siting in places with restricted headroom. Operating function is also different from its predecessors with its intake in the base and its outlet around



Running costs are similar to its older family members at a few pence per hour, and on the subject of economics, the filters are good for hundreds of hours, so no heavy budgeting is needed for maintenance.

The manufacturers recommend hanging the Compact on a hinged bracket allowing it to be swung over one or more machines.

RECIRCULATION

Some dust extraction systems work on the principle of drawing ambient air from the workshop out into a receptacle outside, but the Microclene principle removes most of the harmful dust by

the need to expel the air into some outer environment. Recirculation of the cleaner air causes little perceptible heat loss; a consideration if internal heating of the workshop is necessary.

Maybe the biggest surprise of all are the prices of Microclene products, with the Compacts retailing at under £230.00. With a life expectancy of many years it has to be considered a real investment in health support.

Microclene 400 hanging in the roof. Lower portion is slotted for inlet of dust-laden air; upper diagonal slots for expulsion of filtered air

Specifications

Diameter Height Weight Airflow volume Running cost/ day Retail price

Microclene 400 8in 13in 9lb

400 cu m/h £159 99

Microclene Air Cleaners are Robot Products from Faron Enterprises Ltd.

Ask for nearest retail outlets by telephoning 01705 502999

12in 15in 14lb 1200 cu m/h 8p £249.99 All fitted with moulded plug on 1.5metre lead

Microclene 1200

Compact **12in**

8in 14lb

1000cu m/h 8p £229.99



How to cut dead square

I acquired my first router, coincidentally with the first publication of your magazine in March 1993 and have read them all since. I have also very successfully used my routers.

The majority of your projects and articles have been very good and helpful although one or two have left my mind in a haze principally because I think the author is too close to the subject.

However, be that as it may, many articles refer to cutting a timber 'dead' square. Try as I may, I have never succeeded in cutting anything 'dead' square. Pretty square, OK, but if you take the micro-precision available to you with a router 'dead' square is difficult.

Do any of your readers or contributors have any tips? After all the professionals must cut things square. My test is to cut two ends, line the sides up on a straight edge and if you can see light through the cut ends, the things not dead square.

Many thanks for an excellent magazine.

David Mabbott, France.

Setting a router fence

Some of your readers might be interested in a simple idea I have for precisely setting a fence on a router.

You can purchase from an engineering supplier, tool steel or silver steel of a diameter to suit the collet of your router. Cut off a 50mm piece by grinding a notch and snapping the tool steel or cutting the silver steel with a hacksaw.

You can then insert the pin into the collet and set it's fence by gauging with drill bit shanks or similar to the following formula:

Half the pin diameter, plus size of the gauge, equals the distance the fence will be to the centre of the router cutter.

I should point out that there is no way I could recommend anybody grinding the leftover steel to form a router cutter. You would have no way of judging its balance and also you might leave fine cracks from the grinding process.

The likely result of such an attempt would be an 'explosion' at high revolutions.

The leftover length of steel could be used to make a long drill for drilling across hollow spaces. This would be achieved by grinding or filing the end to the shape of a spade bit. Drill a starter hole with a normal bit. When using the improvised drill bit it is important that you keep the speed low to prevent the home-made drill bit from whipping. Withdraw the bit frequently to clear away all the chips.

Peter Van Helmond Wellington New Zealand

Inspiration for a non-woodworker

Through your pages I would like to thank all the people who write for the magazine and especially those people who send in their 'Readers Tips'. They have all been a great inspiration to me.

My son who is a professional carpenter has been showing me your Magazine for a couple of years and trying hard to persuade me to buy a router, as a means of keeping my hands occupied during my retirement.

For ages I resisted, pretending that I would prefer to get down to the river bank with fishing rod and line, or to read a few good books. However, your readers and contributors made it all sound so easy and inviting that one day earlier this year I went into my local DIY store and purchased a Bosch 1/4 in. router. It came with a cutter so I could get down to some serious messing about straight away.

I must admit that what seems simple and easy on paper proved not to be the case when I get started, and I nearly gave up in shear frustration. However, I have persevered, and with a lot of help and advice from your pages and some practical hand's on tips from my son I have mastered the basics and have made a few small items such as a stool and a mirror.

I now annoy my family by asking for cutters or accessories for presents and spend most of my time in the garage workshop, simply messing about. I love it and my only regret is that I took to the machine so late in life. Just think of all the things I could be making now if I had started 20 years ago!

Keep up the excellent work.

Mark Johnston East Yorkshire.

Routing guide

I just had to write to thank you for publishing your excellent Router Guide Chart in the back of your magazine. Recently I wanted to purchase

Recently I wanted to purchase a new router and with the numerous names and types on the market, I was confused as to which make would offer the best value for money in terms of power, collet size,

accessories etc. Your guide made that decision a lot easier.

At my finger tips was all the technical data I needed, and when I had shortlisted three models, I went to my local power tool shop to make the final choice. I selected a Freud FT200E, it was on special offer and the tool supplier threw in a selection of useful accessories as well. What a bargain.

Thanks again for your help

Peter Stowes Birmingham

Twister router lathe

We are pleased to inform your readers that we have now taken over the manufacture and distribution of the Twister router lathe and Kopy-Kat woodturning copy attachment from the Jackward Partnership.

If any of your readers require information relating to these products they can contact us direct.

We are currently making a few changes to what is already very robust and serviceable products.

Geoff Lewis, Partner

Planet Manufacturing, Unit 11, Dyffry Enterprise Park, Pool Road, Newtown, Powys SY16 3BD. Tel: 01686 626260

Observations on a gate

In 'Routing' Issue 21, the article on page 52 about making a gate caught my eye and prompted me to make the following observations:

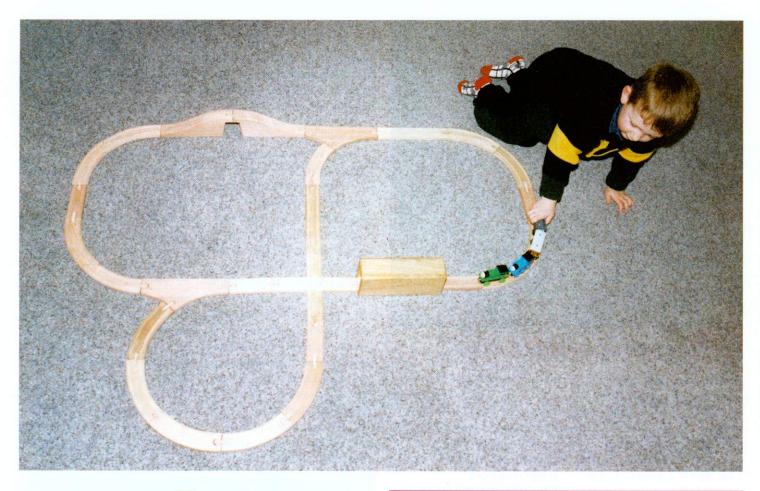
- 1. Although not mentioned in the text, the top edge of the ledges appear to be bevelled to shed water, unfortunately the ends of the braces have not been cut to fit this bevel.
 - 2. The gate would be more

secure if the tower bolts had been fitted to the ledges.

- 3. The appearance would be improved if the bottom ledge had been fixed higher up the door.
- 4. It would be better with a bevelled capping across the top of the frame instead of a piece fixed onto the face.

Hoping these comments are of some help.

J. H. Spurr, Hull.



railway track (part 1)

visit to any branch of the Early
Learning Centre chain of stores will reveal a toy railway layout of similar style to this, though it may not be immediately evident since it is likely to be concealed under a melee of youngsters jostling to get their hands on it, such is its popularity.

Money saving

The purchase of a similar grand layout would, at retail prices, prove expensive, but working with a router on a DIY basis, something similar could be produced for little more than the cost of the material. The only cutter needed for the entire project is a 6mm (1/4in.) diameter straight bit.

For The Children



Keeping track of the toy market on a sensible budget with Jack Marsh

Design

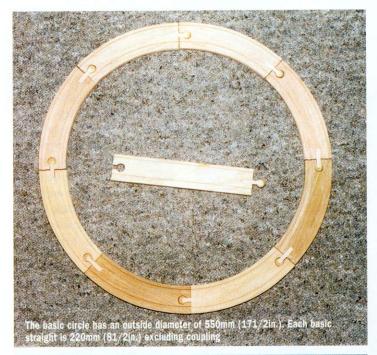
The basic element of the track design is a circle made up of eight identical curved rails, the dimensions for which are given in Fig 1. An accurate card template should be made for this and on it should be marked the actual groove positions for the wheels and also the slots for the couplings which join the

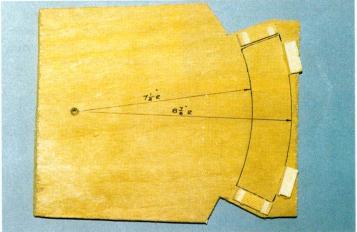
rails together. If you are extending an existing system the template can be made by drawing round one of the curved rails, but the dimensions given will produce track compatible with that of Brio and other manufacturers.

Getting started

Prepare a suitable hardwood to finish 11mm (7/16in.) thick. Beech is probably best: I used a mixture of beech and oak since I had some offcuts to use up.

Mark out the rails with the template, then cut them out just oversize with scroll saw, jigsaw, bandsaw or coping saw.





Jig used for routing the track grooves in the curved rails. I have since modified it so that it can also be used to form the inside and outside of the rail profile (Revised sizes OR = 225mm IR = 185mm.)

Jig making.

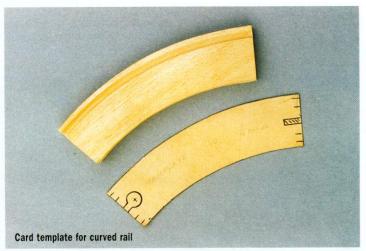
A router is only as effective as the guiding system devised to control its cut. The guide may be of general application, such as the fence supplied with the machine or a table to which the router is fitted, or it may be for a specific job, in which case we usually refer to it as a jig.

I see little point in investing time in making a jig solely for the purpose of reproducing a one-off copy of the original jig shape. A jig only justifies itself if several replicas are needed or if it facilitates a process which would otherwise be difficult. The jigs employed here qualify on both counts and since we are probably

going to make dozens of rails it is worth giving some thought to how the efficiency of the jig can be maximised. It might therefore be useful to outline the steps by which my jig evolved to its final form.

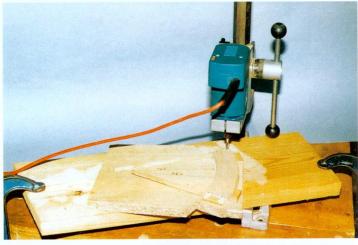
My first jig attempt

This was intended for use with the router in the overhead mode as I wanted to be able to see what was happening! It consisted of a piece of 19mm (3/4in.) chipboard on to which four softwood locating blocks were glued; these were 11mm (7/16in.) thick to match the rail thickness. The curved rail blank, which had previously had the outer and inner profiles





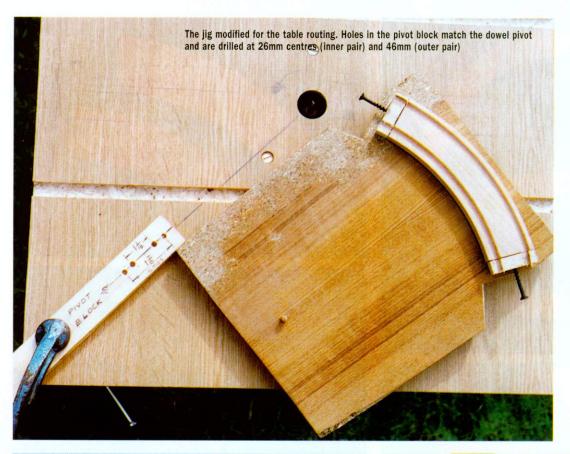
One method of shaping the outside profile using a sanding disc



The jig pivots on a base board under the router. Work is held by long thin wedges. The jig works better when used inverted on a router table, but this shows the principle more clearly

smoothed by spokeshave and sanding disc, was secured against these locating blocks by two long thin wedges inserted against the ends of the rails. This holding cradle was now pivoted on a screw driven into a baseboard about 500mm (20ins.) by 200mm (8in.) by 19mm (3/4in.) which in turn was cramped firmly in place

beneath the router. Photograph shows the set-up for routing the outer groove: machining the inner groove required the repositioning of the baseboard. This worked well enough, but was inconvenient for a long run as it required the rail profiles to be first worked by hand and also involved constant repositioning of the jig.

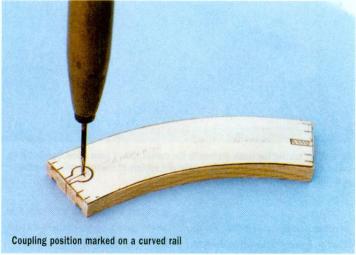


I wanted to be able to machine the outer and inner profiles in addition to the track grooves an in order to do this I needed to dispense with the four locating blocks: this meant that the wedging system had to go. Furthermore I wanted to convert the system for use with a table mounted router, not only is this safer, since the cutter is shrouded by the workpiece, but it would make the system available to more router owners (overhead routing is, I suspect, a minority interest).

Breakthrough

The solution to both problems is shown in the photograph. The rail blank is now secured by two coarse threaded chipboard screws which screw through tight pilot holes in the centre of each end-location block and exert pressure on the ends of the rail, which should be cramped to the jig

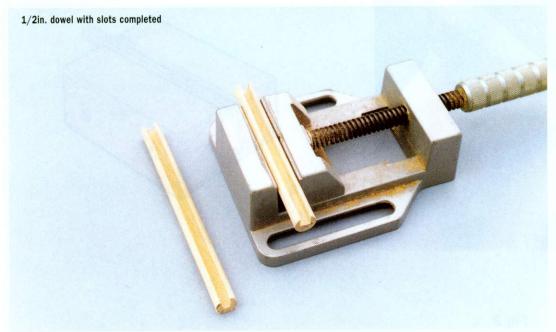














whilst the screws are tightened.

The rapid adjustment needed to work at four different radii was achieved by gluing a projecting dowel pivot into the position previously occupied by the pivot screw and then making up a pivot block with four holes carefully spaced to produce the required curves. This pivot block must be of the same thickness 11mm (7/16in.) as the rails and is cramped to the router table with the line of pivot holes radial to the cutter and at the required distance

from it. With the dowel pivot pin engaging each of the outer pair of holes in turn and with a 6mm (1/4in.) cutter projecting 11mm (7/16in.) the rail profiles may now be smoothed. When working these surfaces always feed against the rotation of cut, otherwise the cutter will grab the work. This means that the inside cut will be made in the opposite direction from the outside one. By sawing out the blank rail as close as possible to the finished size the router is only required to remove a very small amount of material: important with such a deep cut and particularly so with a low-powered router.

Projection

The cutter projection is now reset to 3mm (1/8in.) and using the inner pair of pivot holes the track grooves are cut. Cut right across the locating blocks because the resulting grooves are of use when re-setting the system in the future. After working one side of the rail release the screws, flip the rail over and machine two more track grooves on the other side, again cramping the rail to jig during fixing in case the screws do not exactly coincide with the indentations from the first fixing. Making the curved rails double sided ensures maximum versatility of layout. For example it permits a serpentine or figure of eight configuration without ending up trying to join two males (or two females) together! Straight rails 40mm (1 5/8in.) wide and simply grooved by working against the straight fence. They need grooves on one side only and can be worked in long lengths, subsequently cut to 215mm (8 1/2ins.)

Rail Couplings

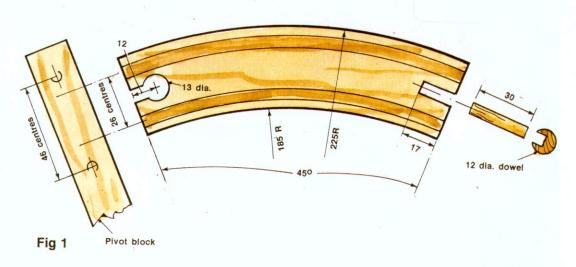
Each rail has a male and female end. The female end is fashioned by drilling a 13mm (1/2in.) hole at the appropriate distance from one end of the rail and then cutting into it a slot just over 6mm (1/4in.) wide. The male coupling is fabricated by gluing a 6mm (1/4in.) thick hardwood tongue into a short length of 13mm

(1/2in.) dowel which has been grooved to receive it.

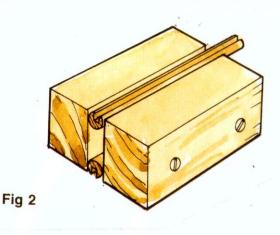
Make the tongue just shorter than the rail thickness, the surplus to be sanded off after gluing in (see below).

Grooving

I grooved the dowel in 130mm (5ins.) lengths by holding it in an inverted machine vice and running against a straight fence as shown. In the absence of a suitable vice make up a cramp by screwing together two blocks of wood as shown in Fig. 2. The slots for the couplings can be cut with a saw, but router buffs can make up another jig to do the job as indicated in Fig. 3. This would be worth the effort if a lot of rails



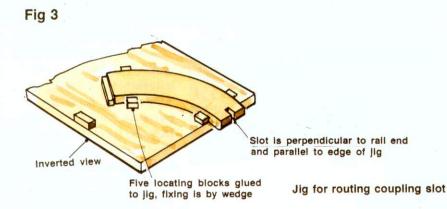




are to be produced. If the bulk of the waste is first sawn away the router can easily clean the slot to a precise width at one pass.

It is better to form the female ends first and to check the fit of the male ends by adjusting the amount of tongue projection before gluing. When set the surplus can be flushed off.

Offer the couplings to check that they fit easily, making any necessary adjustments by enlarging the female ends with a round file. Young fingers are impatient of a close fit so ease the engagement by working a slight chamfer on the ends of the dowel by rotating it against a disc sander.



WIN

lo tec pieman

n conjunction with vacuum table experts, lo tec pieman, Routing brings you an outstanding competition. One lucky reader will win a V Mach vacuum table worth £465. A second reader will pick up a Mini Mach vacuum table worth £89.95

The V Mach is designed to be used either fitted permanently to a workbench or for use in a portable workstation into which it can be fitted in seconds. The table is made in pressed steel and MDF and measures 860 x

510mm. On the upper surface or platen there is a series of suction cells arranged on either side of a central channel which is 60mm deep and 58mm wide. This channel is for the clearance of router cutters, saw blades, drill bits and the like when the tools are in use.

A smaller version of the V Mach is the Mini Mach. This little tool shares many of its qualities and is basically used in the same way. It measures 450 x 300mm on the actual gripping surface. The machine



is intended to be used with an ordinary domestic cylinder vacuum cleaner.

HOW TO ENTER

Just pop your name and address on a postcard or sealed envelope and send it to:

Vacuum Table Competition, Routing 25, Nexus Media Ltd., Nexus House, Azalea Drive, Swanley, Kent. BR8 8HU.

Only one entry per reader will be entered into the draw.

Closing date for entries is 31st July 1998

The first correct entry pulled from the hat on that day will be judged to be the winner of the V Mach table. The second entry pulled from the hat will be judged to be the winner of the runner up prize of a Mini Mach table. The winners will be notified by post after the draw and the names will be published in a future edition of the magazine.



Around The Home



Panel

Peter Dunsmore shows how to make a simple jig to help upgrade a bathroom with an effective replacement panel



A trammel bar is used on the router to cut a disc from the MDF. The disc is discarded

A bearing guided straight cutter is used to make the final template

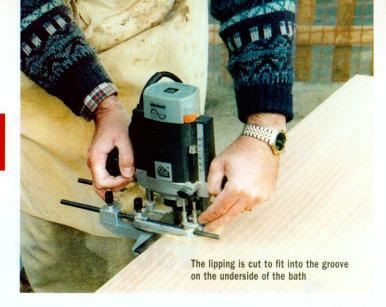




Both templates are pinned or clamped together after marking the radius of the circle on the second template

Cutting the template





aths come in all sorts of different dimensions and consequently there is a substantial range of side panels available to suit. The majority of the panels that can be purchased off the shelf amount to nothing more than a simple decorative pattern routed on a piece of veneered MDF and the groove stained to suit the veneer. To make a bath panel at home requires little more than a small router fitted with a suitable cutter straight cutter, a guide bush and a piece of 6mm MDF

out of which is made the template.

Also needed for this particular design is a trammel bar and a guide fence. To make this panel I started with a piece of 18mm mahogany veneer faced MDF cut to the overall dimensions required. Most panels fit into a groove moulded on the underside of the top edge of the bath and the first and easiest job is to use a straight fluted cutter set at the appropriate depth on the router and using a guide fence the rebate is cut from left to right.

To make the design shown on

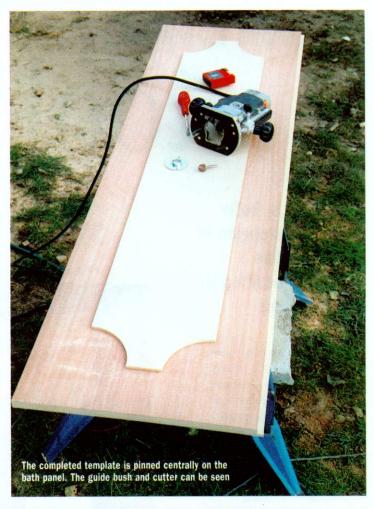


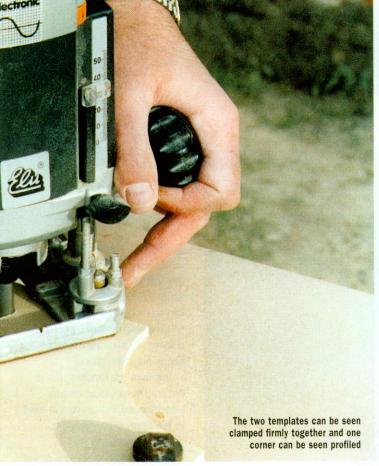
this panel requires a piece of 6mm MDF out of which is cut a circle about 8ins. in diameter. A trammel bar is fitted to the router to achieve this. As can be seen in the photograph a little pressure is applied above the point of the trammel bar to prevent any slipping as the disc is cut out. Alternatively the disc can be pinned on the base board before cutting out.

The disc is discarded into a drawer for possible future use and the remaining piece is used as a guide to make the final template. A piece of 6mm MDF a little smaller than the overall size of the design required is then cut to size ensuring that all four sides are both straight and devoid of imperfections that would then show themselves as ripples on the panel. The radius of the circle is then calculated by halving the diameter and this distance marked away from each corner of the new template. Both pieces of MDF are then either clamped or pinned together and

a bearing guided straight cutter is used to cut the new template to shape. Accuracy is required in marking the radius marks to ensure the final template balance visually.

With all four corners routed to profile the template can be centrally placed on the panel. It can either be pinned in place with two or three panel pins or held in place with some double sided tape. A guide bush and suitable cutter is fitted to the router and the router fed in an anti clockwise direction around the perimeter of the template. Care should be taken to hold the router and guide bush firmly against the template particularly at the corners and to keep the machine moving steadily and smoothly. When completed the template is removed and any pin holes filled with stopping before staining to the required colour and varnishing to finish. It is a good idea to seal all the edges of the MDF as well to prevent water seepage swelling the timber.







Cushion topped stool

Around The Home



Mahogany is Betty McKeggie's choice of timber for this attractive addition to the household

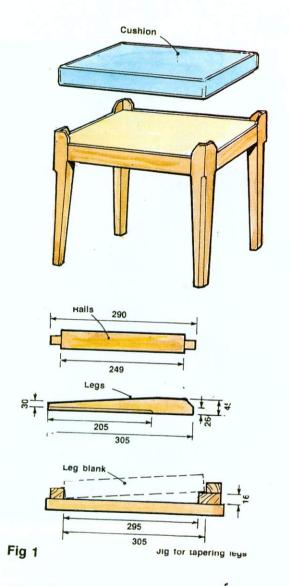
his is a multi-purpose footstool, a bit larger than the usual sort, with a cushion top that supports the lower legs as well as the feet. It will also serve as additional seating when you have got many guests, or as an occasional table with the cushion removed, somewhere to put a cup or glass instead of balancing it precariously on the arm of a chair.

It is made of mahogany for the legs and rails, but any suitable hardwood would do, provided it



grade foam. The given height can be adjusted to match the height of the seat of the armchair with which it is usually used. The stool can be made a bit higher than its finished height initially, then finally adjusted by trimming the legs before fitting the gliders.

The legs are tapered with a decorative moulding on one edge and extend above the level of the seat, the extensions having recesses to accommodate the corners of the



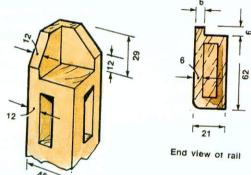
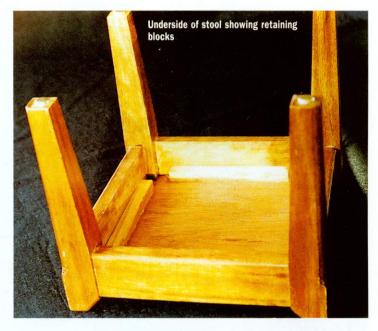


Fig 2 Recess at leg top

Cuttin	g List			
		L	W	ī
Legs	4off	305	45	45mm
Rails	4off	290	68	21mm
Seat	1off	315	315	6mm (ply)
Blocks	4off	180	16	16mm
Hardware etc				
4off 19mn	n glides			
Screws, gli	ue, varnish			
1 Cushion	315 x 315 x	50mm		



cushion. Gliders are fitted to the bottom of the legs.

MAKING THE LEGS

A jig was made so that the taper of the legs could be cut on a table saw. The leg pieces were cut to the required length and each one then fitted into the jig which held it firmly at an angle to the blade. Each leg piece was tapered on the two inner surfaces only, the recesses to hold the cushion were cut into the tops of the legs and the extensions shaped and rounded off.

Mortises were cut off-centre in the legs to accommodate the rail tenons. A decorative moulding was routed on the outside corners of the legs, using an ovolo cutter stopping short at the level of the bottom of the adjacent rails.

THE RAILS

These were cut to length and rebated to take the plywood seat. The rails were tenoned to match the mortises in the legs, the tenons sized so that the inner face of the rebate lined up with the inner face of the recess walls. The lower edges of the rails were rounded

with a rounding out cutter. The rails and legs were dry assembled. It was essential that the bottom of the rebates in the rails and the bottom of the recesses in the legs tops should be all on the same level as the seat will lay on them. This was checked and any adjustments needed were made.

THE SEAT

The legs and rails were glued in place, clamped and left to set. The seat piece was put temporarily in place and the position for the retaining blocks marked in the plywood seat. The pre-drilled retaining blocks were glued to the underside of the seat. Finally the seat was put in place and the blocks screwed to the side rails.

FINISH

As the stool would be subjected to hard use it was finished with two coats of polyurethane varnish. When they were dry gliders were attached to the bottom of the legs.

A covering material was chosen that would wear well and be dry cleanable. The cover had a zip fastener so that it could be



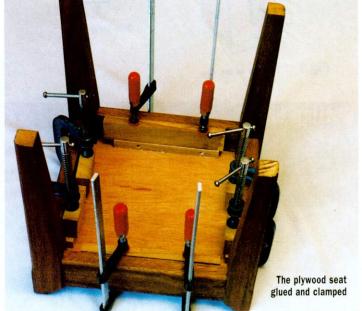




removed and replaced easily. The filling was an A grade of foam approved for upholstery, obtained from a reputable upholsterer. It is essential that the cushion should be fire resistant as possible, as the stool is likely to used by the fireside and can easily be pushed about by children.

If you have a sewing machine and some sewing skills, the cushion would not be too difficult to make at home, but you may find that an upholsterer would be willing to make it for you, for a reasonable price, using an offcut or odd remnant of material.







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Model	Motor	Collet Size	Plunge Depth	Our Price
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reud FT2000E	1900w	1/4" 1/2"	75mm	£199.95
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Makita 5703R 71/2"	1,300w, 230/110v	4,800	66/46mm	£149.95
Skil 1986 91/4"	1.800w. 230v	5,300	86/65mm	£159.95
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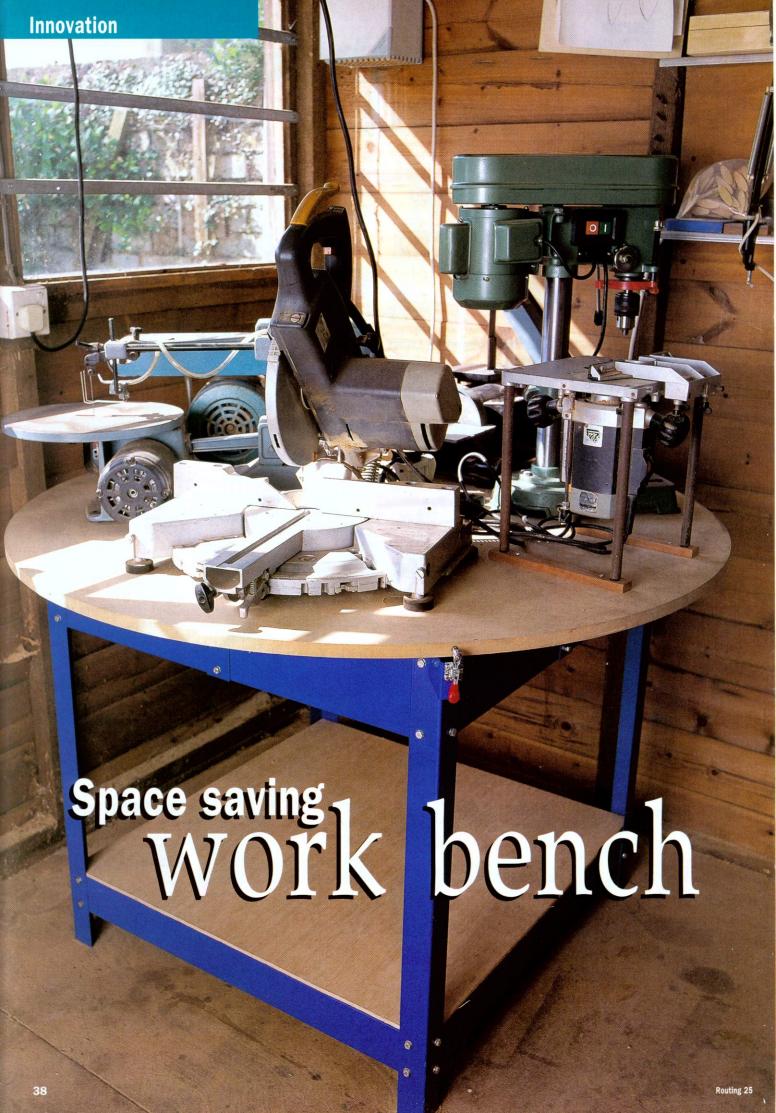
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NEW FREE





Around The Workshop



Peter Roper checks a super idea for workshops with limited working area

ngineer Brian Clarke, of Sutton in Cambridgeshire, decided to plan ahead for his retirement and met a universal problem in his home workshop. There was not enough space to layout all his woodworking equipment along a conventional straight workbench.

He had bought a chop saw, drill press, router and mini table, bench mounted sander, belt sander and scroll saw to make useful items for friends and family in wood.

The choices were simple. Expand the workshop or find a solution to the problem. Expanding the workshop was not an option. So he decided to use his creative and engineering skills to develop a solution.

He looked at various possibilities including tidying away the power tools and only bringing out one at a time, when required, but as we all know with woodworking, the other tools are always necessary to complete a job.

Brian cut a piece of MDF board into a circle and laid it on top of his Black & Decker Workmate. He then fixed his machinery to the top and manually turned the board around so that whatever tool he wanted was in front of him.

When he realised what a simple idea this was, he used his engineering skills to mount the top onto a central bearing - a bit like a larger version of a Lazy Susan and he made a base from welding angle iron together. To

prevent the weight of the machinery distorting the MDF top four nylon wheels were fixed to the base frame to fully support the top. The result is that at least six pieces of woodworking equipment can be safely and securely mounted onto a workbench that occupies a floor area measuring just 1.2m in diameter.

To help fellow woodworkers overcome similar problems Brian has taken the gamble and set about manufacturing the rotating table for commercial sale, using the resources of his fully equipped engineering workshop.

The idea is so simple it is a must for any home woodworker or small business. It is supplied flat packed. The package features an 18mm thick MDF circular top measuring 1.2m in diameter. A substantial base made from 16 gauge pressed mild steel which is finished in a blue epoxy coating. A small pressure clamp is fitted to lock the top in the desired position and prevent movement when working. From unpacking to full assembly takes no longer than one hour and all the components fit together with nuts and bolts provided. The unit features a nylon central bush and four nylon casters mounted on alloy bearings. It is totally maintenance free and built to last a lifetime. In addition, the complete assembly includes a MDF base shelf for additional

Price is only £195 including delivery and VAT.



View showing base and nylon wheel



Small pressure clamp to hold the top



Ready for the tools

Rotating workbench is available from:

Brian Clarke, Sutton Precision Ltd.,

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Around The Workshop



Michael Waite tells us how he worked out his specific requirements for a very special project

cutting jig

his jig was made for a specific project which was for a new mirror frame to replace the one shown in Photo. 2. This was painted softwood and rather old-fashioned. The replacement frame was to be in cross grained walnut veneer to match a solid walnut sideboard which I made many years ago.

THINKING IT THROUGH

It was necessary to make a jig which would be capable of undertaking several specific routing operations:

- 1. to shape the inside and outside of the top rail;
- 2. to create the internal rebate to take the mirror:
- 3. to cut the classic ogee moulding, which was formed on the inside edges of the frame.

The jig would also be useful for routing the outer circumference of a table. Although the jig as described will route to a radius of just over 900mm, the principle demonstrated could be used to machine up to any practicable size.

KEEPING IT SIMPLE

In this article, the construction of the mirror frame and routing

techniques have not been dealt with, but only with details of the jig. The principle of using a pivoted long arm, with the router mounted at one end is a well known one. The feature of the jig dealt with here is that it offers a very precise adjustment of up to 8mm, which is often necessary to produce accurate work. I have not seen anywhere else in print this type of adjustment, which though simple, is extremely effective.

SORTING IT OUT

To find the radius of the top rail, the mirror frame was placed face down on two sheets of wallpaper lining paper, taped to a baseboard and a line drawn round the outside. After removing the mirror frame, a chord was drawn to the arc and a centre line struck at a rightangle to this. From this it was a matter of using trial and error to find the centre point of the outside radius, using the non hi-tech method of panel pin, string and pencil. This is shown in Fig. 1. It showed that the outside radius was approximately 915mm. When this was established, it dictated the principal dimensions of the jig, which are shown in Fig. 2.

The jig was made mostly of



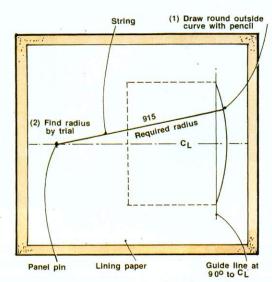
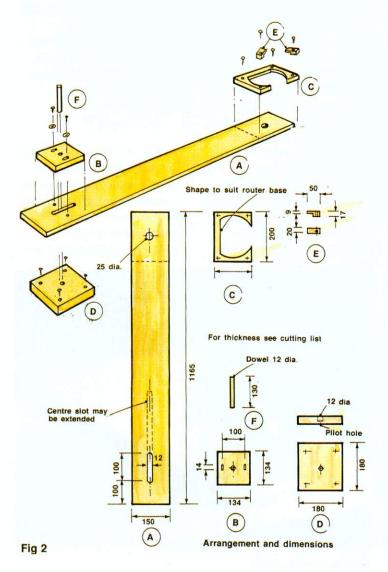


Fig 1 Finding required radius of top rail



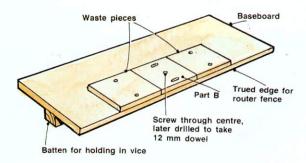
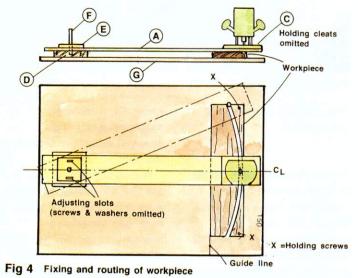


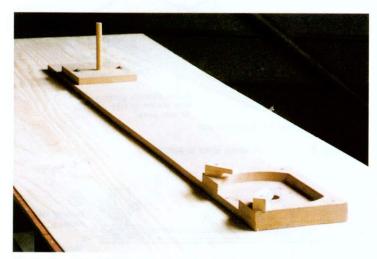
Fig 3 Routing slots in part B



B

M6 X 35 HEX HEAD BOLT

4MM DIA.
CLEARANCE
HOLE
HOLE
LOCKING BOLT AND CENTRE PIVOT



The jig without the router

MDF, although plywood could also be used.

THE PIVOTING ARM

'A' was planed to width and cut to length. A centre line was marked and one end slotted to take a 1/2in. dowel, which formed the pivot. If required for future use, the slot could be elongated. The slot was created with a straight 1/2in. cutter and the router's own side fence used.

The adjustable pad 'B' was planed to width and length and slotted to take the securing screws. A 1/4in. straight cutter was used and again it was a straightforward job using the router's fence. Since the cutter was fragile, the full depth was achieved in three passes of the

router. Fig. 3 shows a suggested set-up to give improved security, whilst routing this part.

The holding pad, 'C' as shown in the photographs, was made from 15mm board. The router was placed on a previously sized blank and a line drawn round the outer profile. The centre section was removed with a jig saw just inside the line and the remaining waste removed by chisel and various shaped boards with coarse and medium abrasive paper glued to them (preferably aluminium oxide, which is long lasting and durable). The router should be a snug fit within the opening. The pad was then drilled and countersunk to take the fixing screws and holding cleats.



The old style mirror frame

The holding pad was temporarily clamped to the pivoting arm and the router mounted in the recess. The position of the hole through which the cutters would later project, was found by putting a small diameter cutter in the router chuck, plunging the router, (power turned off) and rotating the chuck by hand sufficiently to mark the arm. It was ensured that the mark thus obtained fell on the previously marked centre line. The router was then removed and the 25mm diameter hole drilled through the arm with brace and bit. The holding pad was then finally glued and screwed to the

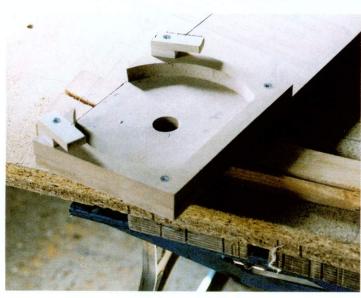
A spacing block 'D' was needed at the pivot end of the

arm and this obviously had to be the same thickness as the workpiece. The spacer may be of a single piece of material, or built up with several layers. It was drilled to take the 1/2in. pivot dowel, the pilot hole on the underside and the holes for the fixing screws.

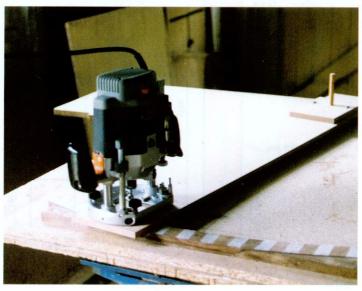
The holding cleats, 'E' were made from hardwood, drilled, countersunk and screwed into place to hold the router securely.

THE BASE BOARD

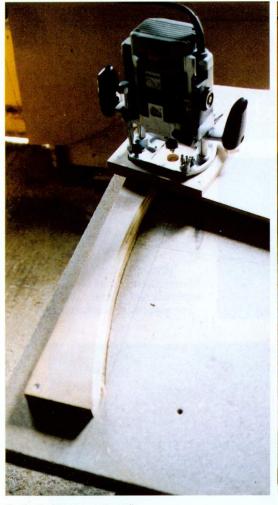
Part 'G' was made from a piece of 3/4in. MDF. chipboard, or plywood could also be used. Fig. 4 shows the elevation and plan. The baseboard must be of adequate size to take the workpiece and the pivoting arm.

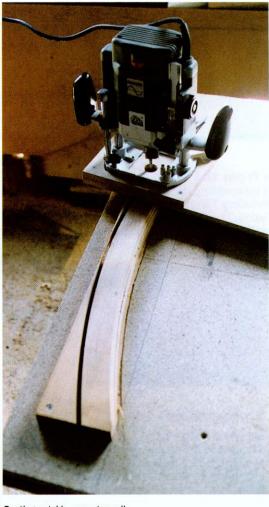


Pad for holding router



Cutting outer curve - top rail





Routing outside curve top rail

Routing inside curve on top rail

In this case 1200 by 900mm was about right. If in doubt, it is preferable to err on the generous side.

The baseboard was marked with a centre line and a guide line marked at a rightangle across this to aid the positioning of the workpiece. These lines are shown in Fig. 4.

THE SETTING UP OF THE JIG.

1. First the workpiece was

marked on its centre line with the outside and inside radii and the rebate size. It was then lined up with the cross guide line and screwed to the baseboard.

- 2. The router with appropriate cutter fitted was mounted within the holding pad.
- 3. The router (switched off) was plunged to the work surface and positioned where the cut was to come.
 - 4. The pivot dowel was fed

through the adjustable pad, the pivoting arm and into the spacing bar.

- 5. This block was held temporarily whilst the pivoting arm was removed, then lined up over the centre line on the baseboard, using the pilot hole to locate it accurately. The block was then screwed to the baseboard.
- 6. The pivoting arm was replaced and any small

adjustments made by slackening the screws through the adjustable pad, moving the pivoting arm forward or backward, then re-tightening the screws.

Note that once fixed the pivot point is not changed and all subsequent routing operations are made from the same pivot point.

SIMPLE PRECAUTIONS

It would be wise to carry out trial cuts on a spare piece of wood before working on the finished item. One advantage of the jig as described is that the part being worked could be made slightly large (say 0.5mm) and then by means of the adjustment provided, a final skim cut taken to bring the work to final size. This would help to give a fine finish.

Photographs show the top rail outer curve being formed. Note the two screws which held the rail to the baseboard and which are well clear of the path of the router cutter. The final depth cut should stop just short of the full thickness of the rail so that the latter does not become detached. If this happened it would be a hazard. Alternatively, the rail may be secured to the baseboard with double-sided tape in addition to the screws, in which case the final cut could be safely taken through the rail.

Photographs show the routing of the inside and outside curves on another rail. This was made in cherry, although it was later discarded in favour of the walnut version.

Part	Description	Qty	Length	Width	Thickness	Material
A	Pivoting arm	1	1165	150	13 (1/2in.)	MDF/Ply
В	Adjustable pad	1	134	134	15	MDF/Ply
C	Holding pad	1	200	150	15	MDF/Ply
D	Spacing block	1	180	180	to suit	MDF/Ply
E	Holding cleats	2	50	20	17	Hardwood
F	Dowel	1	130	1/2in. dia.		Hardwood
G	Baseboard	1	1200	900	19	MDF/Chip

Hardware
2 screws 10 x 1in. round head.
4 screws 8 x 1in. countersunk.

4 screws 8 x to suit spacing block.

2 washers steel 15mm outside dia

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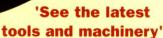
With so many different models of woodworking machinery on display from leading manufacturers, this is the venue to come and see both established and new models of saws, lathes as well as power and hand tools. In many cases these will be demonstrated and put through their paces. Compare prices and specifications to see which will best suit your workshop requirements.



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For The Children



Model stable for a fashion doll's horse

n designing a project of this kind it is first necessary to decide, as nearly as possible, the probable end use. The age and abilities of the end users need careful assessment with more than a passing regard to their requirement for detail. This may seem fairly obvious for what is essentially a simple toy, but compromise needs to be made between the functionality and durability of a toy and the realism and detail of a model. Modern materials technology allows toys to be produced with ever increasing detail and reasonable durability. It is in competition with this that the average woodworker sets out to make a child's toy that will have an enduring appeal with durability to match.

My aim in this design was to produce a compromise. With two daughters showing an avid interest

in horses the end product should resemble a real stable with the necessary fixtures and fittings to allow realistic operation of the stable yard. It did however, still have to stand up to the rigours of the toy cupboard and the occasional exuberant behaviour.

The type of dolls and horses that this stable was designed for are not made to a true scale, some degree of licence is taken with the proportions so it is necessary to make a compromise in determining the size for the stable. The rider measured 8in. high while the horse stood 7 1/4in. to its head. There was also a foal which was 5 1/4in. high. The doors were made 8 1/2in. high with the lower section of the stable door 4in, high to allow the horses to look out over it. The larger of the two stables was designed with room to accommodate the mother and foal.



David Webster creates a super toy, that all kids will love

The dimensions can easily be scaled up or down to accommodate horses of different sizes, however if the size is changed significantly, consideration should be given to using material of a different thickness to keep the overall proportions.

CHOOSING THE MATERIAL

The material chosen for the stable was 6mm MDF. This material is now readily available from most larger outlets and is generally sold in 8 x 4ft. sheets. It is however possible to buy in smaller sizes from larger DIY outlets.

MDF is widely used in toy manufacture. It is fairly stable without any grain and is therefore economical in use when cutting irregular shapes from sheets.

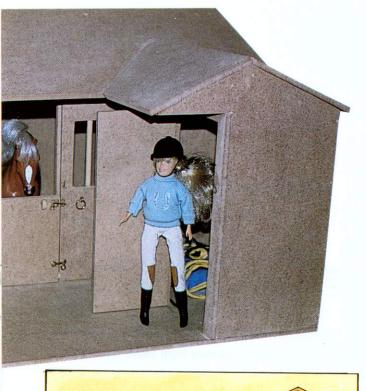
Easily cut and finished it readily accepts a variety of finishes. MDF is reasonably strong and durable in normal use but if broken has the added advantage that no sharp splinters are produced as with natural timbers or plywood.

As a note of caution whilst working with MDF care should be taken with regard to the fine dust particles produced and the necessary precautions taken.

CUTTING TO SIZE

All the pieces may be cut from two 4×2 ft. sheets of 6mm MDF. A 1/4in. gap has been left between adjacent pieces to allow for the saw cut and cleaning up the cut





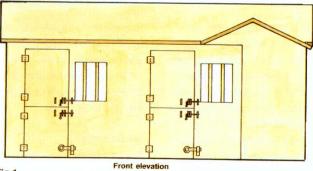


Fig 1

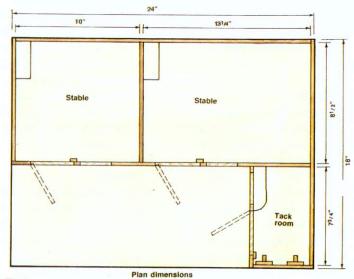
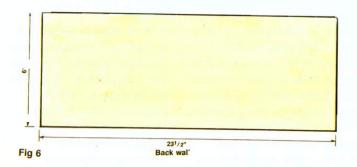
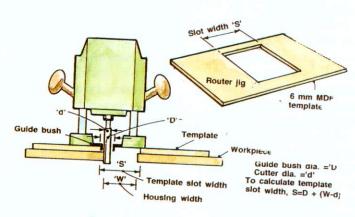
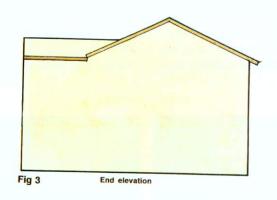


Fig 4





Router jig for cut-outs in sheet material



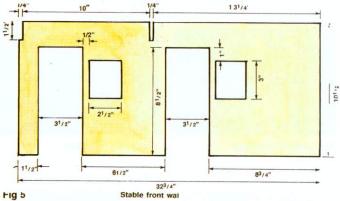
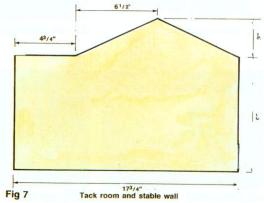


Fig 5



edge with a plane.

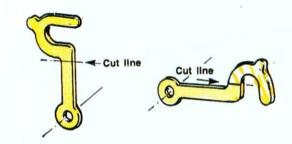
Mark out the sheets as shown and cut out and trim up each piece. The two pieces for the tack room roof should be cut about slightly too long as shown to allow the compound mitre where the roofs meet to be trimmed to fit.

Mark out all the openings and cut outs to joint the pieces together. Next cut the openings for the doors and windows. As with most repetitive cutting the easiest way is to use a router with a guide bush fitted and a template cut to suitable size (Photo 1). The dimensions of the template depend on the diameter of the guide bush and the size of the cutter. Fix the workpiece and

template together and clamp them both to the bench. As always with the router when cutting inside move the router in a clockwise direction. A TCT cutter is desirable due to the abrasive properties of MDF. The rounded corners left by the router cutter should be squared up with a chisel and each piece lightly sanded to remove the sharp edges.

ASSEMBLY

First try all the pieces together to check the fit and that the stable is square when assembled. The pieces are joined using PVA glue reinforced with fine pins. As the pins are to be driven into thin





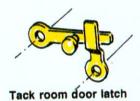


Fig 2 Door latches from brass side hooks

material it is wise to drill pilot holes first. Clamp the pieces together and drill about four holes at each corner. Apply the glue and drive in the pins taking care to support the longer sides so as not to strain the joint.

It is not necessary to follow a specific sequence when joining the walls together however it is generally best to join up the main outer walls, checking they are square, and then fit the internal walls. Set aside and leave the glue until it is fully dry.

THE ROOF

Next the main roof sections should be fitted. The front and upper rear roof sections are glued and pinned in the same way as the walls, the front section fitting into the cut out in the tack room front wall. The rear section of the roof is split in two with a removable section to allow access to the stables. Where the pieces meet at the ridge they are chamfered to butt together. The angle at the ridge is 130 degrees and if a table saw with a tilting arbour is available this may be set to 25 degrees when cutting the roof pieces. Otherwise it is a simple job to achieve a perfect fit with a plane. The rear section is supported by two blocks glued to the underside of the roof and resting against the back wall. Turn the stable upside down and

with the roof in place mark the position of the inside edges side and back walls on the underside of the roof. Remove and glue the blocks in place so that the roof will be a snug fit.

THE TACK ROOM

The tack room roof is fitted in a similar way with a mitre at the ridge cut as before. Where it meets the main roof however it is necessary to cut the mitre at a very shallow angle. As the pieces have been cut oversize the mitres may planed to fit accurately to the main roof and the excess length removed at the gable end. The right section is removable and is supported as the main roof using blocks glued underneath.

To provide extra support at the ridge (should it be sat upon!) a length of 2 x 1in. timber planed to the 130 degrees angle may be glued in place under the ridge and pinned through the side walls.

THE BASE

To fit the stable to the base set the assembled structure in place and mark the positions of all the walls. Drill pilot holes for the pins and apply glue to the bottom edges of the walls. Turn the whole assembly over and pin through the base from underneath taking care to







Main sections assembled





Door latch components



Door furniture fitted



View from underneath showing the arrangement of the walls





Fixing the window bars

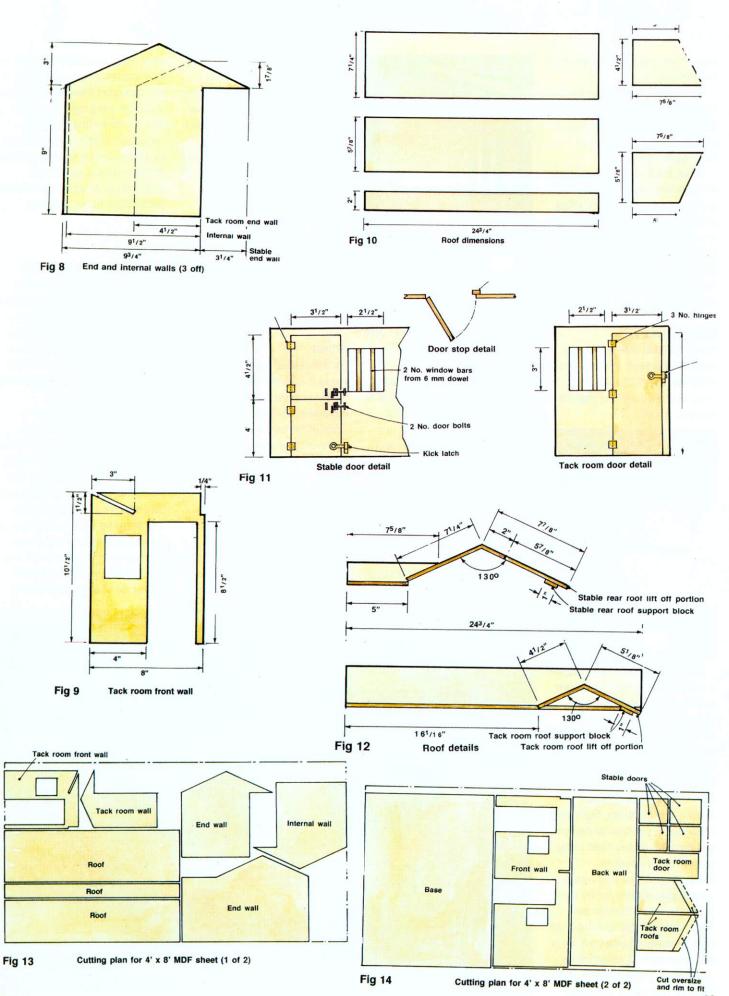




Door bolt components



Tie up rings fitted



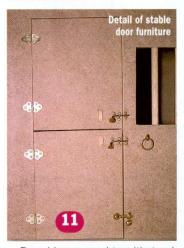
support the roof of the stable on a flat surface.

The bars at the windows are cut from 6mm dowel and are made a tight fit in the window openings, a little glue on each end makes them a permanent fit.

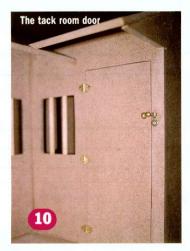
Check the doors in the openings for sufficient clearance whilst swinging open. Glue 1/2in. strips of MDF to the rear of the opening to act as a door stop. A strip of thin card placed on each edge of the door whilst fixing the hinges will provide sufficient clearance for easy opening.

DOOR FURNITURE

One problem in making a model that will be actively played with is obtaining fittings of a suitable scale that are durable enough to stand up to use.



Door hinges need to withstand a considerable amount of strain and the only hinge available resembling the type normally found on a stable door would have been far too weak. Instead I used tiny metal gilt hinges (Hobbies part no 12702) as a good compromise between realism and durability. The doors were held in position by clamps and then the hinges fixed using cyanoacrylate adhesive (Superglue). Brass pins with a drop of glue applied to the point were now driven through the holes in the hinges to firmly hold them in place. Support the walls and doors behind whilst driving in the pins. A pair of fine nosed pliers is very useful in holding



the pin whilst it is struck by the hammer. If a pair is not available try wedging the pin into the teeth of a comb to save wear and tear on the fingers.

For door latches I was unable to find anything suitable so had to resort to making my own. The traditional stable kick latch is fitted low down on the door and as its name implies, is for operation by the foot. To make a passable latch I used 3/4in. brass side hooks. These were cut and bent as shown on the sketch then fixed to the stable small brass round head screws. A slight modification involving the addition of a picture hook pin provided a

handle to enable one to be used as the tack room door latch.

The door bolts were a little more tricky. The bolts themselves were made from picture hook pins bent to a rightangle. The slides and keep being made from small brass model components bent to suit. To fix them to the doors they were first glued in place with a tiny amount of superglue and once this had set, small brass pins were driven into place having first checked that the bolt would slide freely. The end stop was made from a small scrap of dowel also glued in place.

FITTINGS

For the internal fittings of the stable it is quite likely the horse came complete with its own equipment which can be readily adapted for use in the stable. However there will probably be a few other things required.

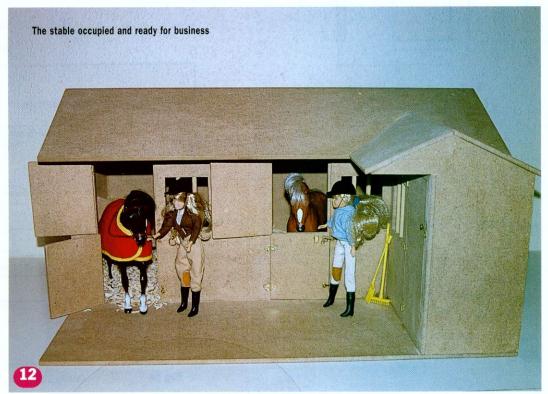
Feed bins, shelves and racks for saddles and bridles were quickly made using offcuts of MDF and dowel. Small brass split rings and screw in eyes were fitted to the stable walls to allow frisky horses to be secured whilst grooming. Similar rings

were fitted inside for hay nets to be hung on. A rack was made in the tackroom from short ends of dowel for hanging the brushes and hay forks that had been collected along the way. The list could have been a very long one but pressure to get the job finished prevailed and so the job progressed to the finishing stage.

FINISHING

On MDF a light sanding with fine cabinet paper will produce a silky smooth finish capable of accepting a wide variety of finishes. Punch pins below the surface and fill the holes with stopping, light oak produces a finish of very similar colour to MDF. Sand the whole stable to remove any sharp edges and corners.

My original intention was to paint the stable however, after assembly, the verdict was that the unpainted surface was preferable being very much in the style of a traditional wooden toy. Needless to say, if painting is intended, then this would be better undertaken at an earlier stage before the door furniture or fittings are fitted. Any paint or varnish used should of course be of a non toxic nature.





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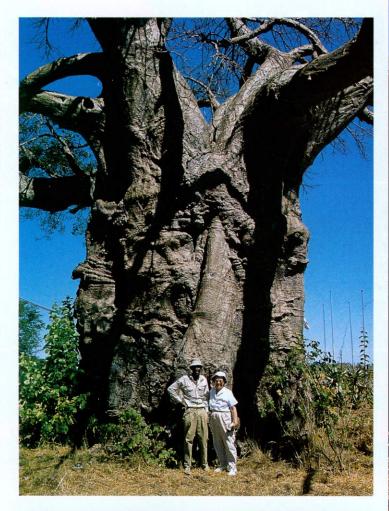
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Around The World

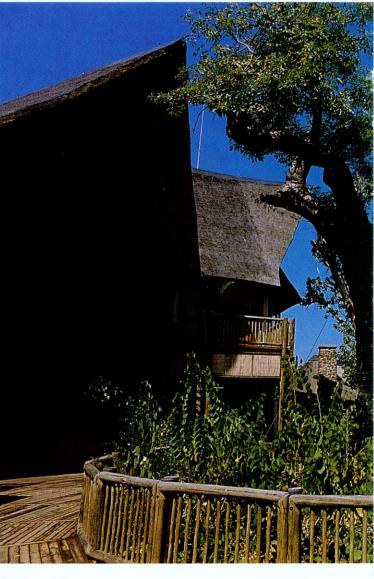








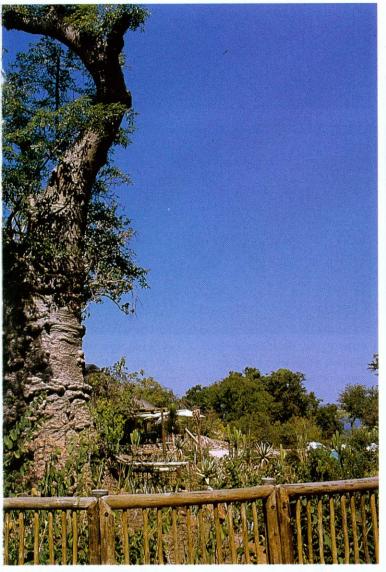
Africa



n conjunction with 'Into Africa Safaris' it offers luxury accommodation together with game drives in open vehicles and splendid river trips along the Chobe river to enjoy game and bird watching; relaxation and the African sunsets.

Mowana is the Botswana name for the Baobab tree (Adansonia Digitata). Originating in Madagascar the Baobab is one of the world's most ancient trees. Probably the longest living tree in Africa, one specimen I saw is 1,000 years old, 33 metres high and 22 metres in circumference. It is known locally as the 'upside down tree' because of the huge branches irregular root like appearance. The bulbous, fibrous trunk hollows with age, the thickness of the bark only exceeded by that of the Sequoia. Sometimes used as dwellings, in nearby Kasane one is even used as a temporary prison! Rope, cord and cloth are made from the bark and the leaves and gourd like fruit are

Recently, Derick McGroarty spent a few days at the Cresta Mowana Safari Lodge in Botswana, but he was equally interested in the trees and the animals



the source of medicines and condiments including cream of tartare. A fine specimen stands at the entrance to the Lodge grounds. Whilst Baobabs are soft wood and may not have direct interest for woodworking, the Safari Lodge, built around a splendid 800 year old Baobab, certainly is.

To ensure that the hotel development did not interfere with the environment, each building in the complex was designed around the trees so that none of the rare species

were disturbed and foliage was untouched allowing uninterrupted bird-life. The central block is built on a raised foundation with a double volume ceiling. Designed to compliment the Baobab one side is completely open with board walks to the gardens and river. Extensive use is made of indigenous hard woods beneath attractive Matabele thatching. The overall result is a gradual blending with the bush.

The eye-catching Mukwa (Pterocarpus Angolensis) with its irregular patterns of brown and





golden yellow is a hard wood used extensively throughout the building, but is at its best in the large open reception where the patterned wood is continued on staircases and the landings of upper areas. Reception is fronted by superb carvings of indigenous animals. I particularly admired the large African elephant heads carved in Ironwood. Ethnic designs are faithfully reproduced by fine craftsmanship in Baobab 'rope'. The Mukwa contrasts with animals carved in darker woods.

This theme is repeated in public rooms and bedrooms. In the Manager's office I admired the chairs, shaped and carved to the design of a Malawi chief's seat that would have been difficult to distinguish form the original.

Wood substitutes and 'knock-down' furniture construction methods are unknown here. The abundance of natural materials and time available to fashion it means that all furniture is solidly constructed. Mortise and tenon, dovetailing and other craft jointing is expected and accepted









normal practice. It is a pleasure to touch and use smooth sliding drawers and solid wood tops. In the de-luxe suites furnishings are even more impressive. Walls with built-in wardrobes and cupboards are panelled in Mukwa and most furniture is of Rhodesian teak (Baikiaea Plurijuga). The tree grows up to 50 feet tall and 3 feet in diameter. Very hard with a fine,

even texture it requires a tungsten tipped saw to cut it. Finished products are lustrous smooth and extremely durable. Enormous amounts of this teak was used for railway sleepers in this part of Africa at the early part of the century when visionaries considered a line from Cairo to the Cape. Modernisation of more modest and economic railways released







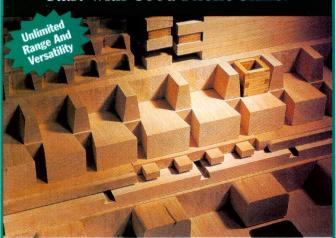
many 50 year old railway sleepers which were collected and used by farmers as animal pens. Since the suitability of this mature hard wood for recycling as furniture has become apparent, demand has naturally increased and with it prices of finished articles. At first sight construction looks austere an heavy. Heavy it certainly is; but the 'straight lines' of tables, chairs and cabinets follow and enhance the natural straight lines of the grain. It looked and

felt exactly right in this setting.

Of course, Mowana is not unique in blending materials with the environment to give an attractive and comfortable setting for visitors. Some tourist accommodation and camps take you closer to the natural wild life and scenery of Africa. But, even if only for a short while, appreciation of my surroundings at the Lodge created from natural woods was almost as great as the bush outside where herds of elephants roamed free.



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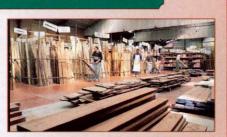
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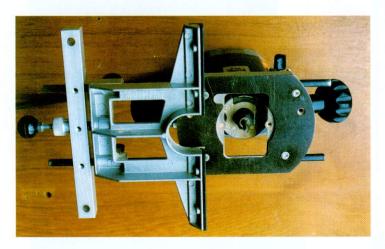
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faccurate fence



f like me you have a router with a guide fence that does not have micro adjustment, yet also have a pivot frame jig, then parts of the jig can be used to enable the fence to give micro adjustment. The router is set up

as follows:

1. The guide fence is attached to the rods that fit through the router base and then a pivot bar is also added to the rods as shown in the photographs.

The 6mm diameter adjuster studding from the pivot frame jig

Around The Workshop



Using parts of a pivot frame jig David Ford creates a micro adjustment of the router fence guide

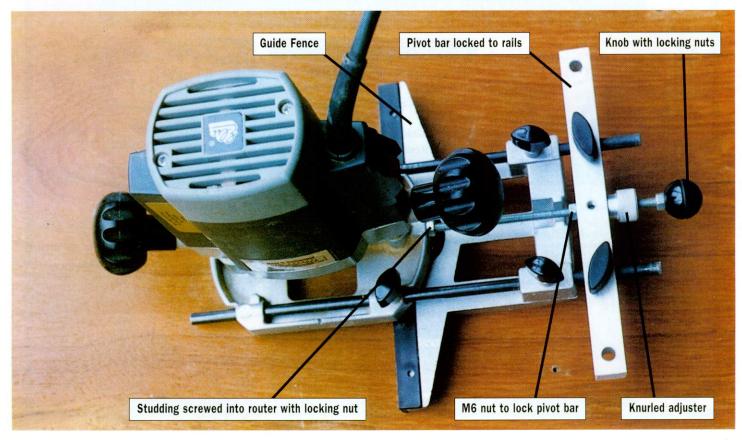
has to be fixed to the router base. First the knurled adjuster is threaded onto the studding and at the end of the studding the knob with its locking nut is added.

3. The free end of the studding is now pushed through the central hole of the pivot bar and a further M6 nut added. This nut will be used to lock the pivot bar to the knurled adjuster, which in turn locks the router guide fence in its desired position.

4. Finally a further M6 nut is added and the studding is

screwed into the base of the router and locked by this M6 nut.

5. In use the two guide rod locking nuts that lock the router to its parallel rods are released, while the similar locking nuts on the router guide fence and on the pivot bar are tightened. The knurled adjuster is then rotated against the pivot bar, which moves the router guide fence until it is in the desired position. Finally the knurled adjuster is locked in this position by the free M6 nut tightening against the pivot bar.



holder

A simple project designed and made by John Todd

his project is very useful when you cannot put your hand on paper and pencil at the crucial moment. The box is made to hold the standard size pads available at stationers and the pen is always handy. This project is easily made without a router table. Oak was used, but any good hardwood would be suitable.

CONSTRUCTION

The box is made from 9mm timber and the two opposite sides are rebated using a 9mm rebate cutter. It is easier if you use one piece of timber for the

Cutting list All sizes in millimetres						
	No.	L	W	Т		
Sides	2 off	110	35	9		
Sides	2 off	105	35	9		
Base	1 off	160	140	15		

Completed telephone pad



two sides to be rebated wider than the two pieces required and then cut to width. It would be an idea to have a block on the underside held with double sided tape to secure the workpiece in the vice or you could use a router mat.

THE PAD

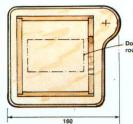
The standard telephone pad is 90mm square and we need approximately 3mm clearance all round. One end is shaped as shown to make it easier to lift the top sheet when the pile gets low. This was cut with a coping saw and finished with a drum sander held in the pillar drill. Check for squareness then glue and cramp on a flat surface. The small set of Stanley Cramps was ideal here.

THE BASE

This is made from 15mm oak and is shaped as shown to accommodate the pen and its trumpet in the corner. After cutting the shape use the disc sander and drum sander and

Around The Home

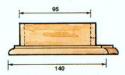




tted line indicates block to assist in uting base secured with double sided tape

Block to assist routing rebate of two sides at once

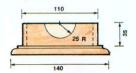
Box with pen trumpet to hold telephone pad



rout all round the edges. A rounding over cutter with guide pin was used here. This was done on the routing mat. Drill and counter bore for the trumpet to be held in position.

ASSEMBLY

After the box is finished and sanded, glue it in position on the base. The relieved side of the box needs to be located on the same side as the pen and trumpet. Instead of cramps a medium size weight could be used here. Sand well and give two coats of polyurethane varnish. Finish off with small self adhesive pads on the base.



Materials

Pen and trumpet from :
Craft Supplies Ltd.,
The Mill,
Millers Dale,
Buxton,
Derbyshire. SK17 8SN.
Tel: 01298 871636
Fax: 01298 872263
Self-adhesive pads

Tools required

Router
Rounding over bit
Rebate cutter
Tenon saw
Coping saw
Try square
Corner cramps
Hand or pillar drill
4mm drill
Counter sink
Optional tools
Drum sander
Router mat

Half lap routed workpiece to be cut to width for two sides, also base before routing



Around The Home



A contemporary Cabinet



Geoff Hopcraft describes how he made a stylish piece of furniture

ut Oliver Cromwell
never kept his ale in
a cupboard like this'
I argued. 'Well it
suits our old house
and will go with the Welsh
dresser', said my wife. We were
in the market for what used to be
called a 'cocktail cabinet'. This
piece was a tall Jacobean
reproduction, with a heavy let
down plate glass lined front door
supported by metal struts.

It was held closed buy a rather weak ball catch. Below the capacious plate glass lined interior was a cavernous cupboard with a plywood bottle holding fitting. We did not need this and used it for sundry junk.

THE MOTIVATION

When I saw the move to a smaller house on the horizon, after our large family had left home, my furniture designing cells began to create a more compact modern style replacement. It was to have user-friendly features the other did not possess.

Woodwork was a hobby that had run alongside my profession of photography for some years and this was to put my skills to the test.

TRIED AND TESTED WAYS

Ergonomic design thinking was inspired by the standard methodical public bar row of

bottles and the above head slot storage of stemmed glasses. This meant a long shallow design to enable easy access to the bottles and tambour doors would overcome the problem of very long doors swinging out over the dispensing apron.

One thing I was sure about, no glass - the clash of bottles and tumblers on the glass bases had made me wince for years.

All surfaces would be finished in polyurethane varnish impervious to spilled drink and offered a much kinder surface.

The second need was compact storage of all sizes of liqueur, sherry and beer glasses, by using the slot hanging system, for the stemmed glasses.

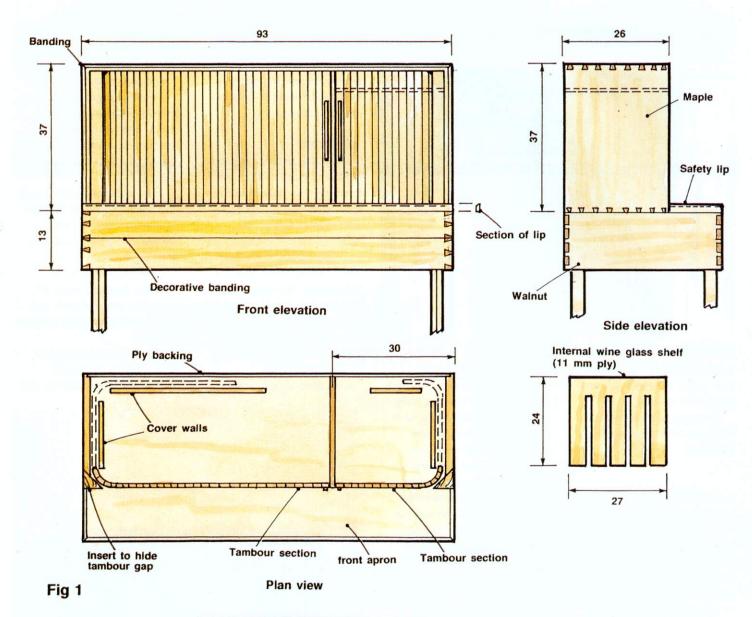
I prefer to build in contemporary style and I also love the contrast of mixed wood colours, using them as a design feature. I was greatly attracted to maple as the basic wood, it has a soft gentle wavy grain and is easy to work.

Walnut was the chosen contrast.

THINKING IT THROUGH

Experience has taught me never to start cutting wood until you have at least a layout drawing.

All measurements were dictated by bottle quantity size - the glasses section by the same guide lines. So for starters, these were assembled on the bench plus other details such as



mats, ash trays, cocktail stick containers and measured around.

The same was done with the stemmed glasses and tumblers and a little added luck! The result was a cabinet 900mm long by 260mm deep and 360mm high.

NOW THE DOORS

Tambour doors have always fascinated me and could be an attractive design feature. They would be complicated to make, but practical, and in walnut would provide the colour contrast.

The initial work was to edgejoin the maple, after planing the sawn planks I obtained from our local hardwood supplier.

This was done at my local evening class session. My vintage wooden shooting plane



Doors closed showing standing area or glasses



Close-up of glass storage and hanging shelf

shot the edges in the 20mm thick maple and resin glue and clamps did the rest.

I managed to make the top, sides and wide base, with one edged join.

JOINTING

Solid dovetailed corners were the chosen joints. These were cut with much care and a lot of measuring to ensure they made a balanced edge pattern. The old maxim that dovetails only fit once i.e. the first time, had to be ignored as rough assembly occurred a few times before gluing!

Much forward planning was needed to make sure that all the grooves for the tambour doors, the partition wall and the rear lining panels were cut accurately before carcase assembly.

Gentle corner curves in these grooves were essential to ensure smooth operation and a curved 'run out' was made at the back to slide in the completed doors top and bottom. This was all done with my Elu router before the main carcase was finally glued up. The slotted stemmed glass shelf was measured for correct height to ensure the hanging glasses missed the standing glasses! To avoid the sliding

doors hitting bottles and glasses as it ran round the back of the cabinet a covering lining of ply was inserted in the back. The rear of the cabinet was birch ply and the doors ran between this and the lining. A plain rebate was cut for this back panel. I was determined that my drinks cabinet was not going to exhibit any irritating features in future use! My information source for dovetail technique and tambour doors was Joyce's 'Furniture Making' hible.

MATERIAL SELECTION

As I found my walnut supply varied in colour the door strips were arranged to vary the tones across the front to give a balanced random pattern of dark and light. The lining hinge material I chose was a flexible artists canvas, strong and hopefully long lived. All the strips were finished in sanding sealer and wax polished on all except the rear surface. This was to ensure that any glue squeezed from gluing the backing was thrown off the edges and did not stick the strips together. To ensure all the tambour slats are equal a clamping jig needs to be used and the assembled sawn slats planed and sanded together in

this jig. The jig set up is also used for attaching the backing cloth, this makes sure the slats are closely set. The slats are best bandsaw cut of suitable correct width material.

THE PARTITION

The vertical partition between bottle and glass section was of 9mm ply, thick enough to be grooved to hold the horizontal slotted glass holder. The righthand side of this was held on a ledge glued to the 3mm ply door covering wallas shown in the drawing. The most important requirement of these doors was smooth and easy running and this was achieved by much sanding and waxing of the grooves and edges.

I suppose my only user

complaint is the rather harsh rattle of the door operation announcing ones bibulous intentions to all and sundry.

I eventually got around to making the base, again in maple and walnut with contrasting dovetails and bandings (bless the router for this!).

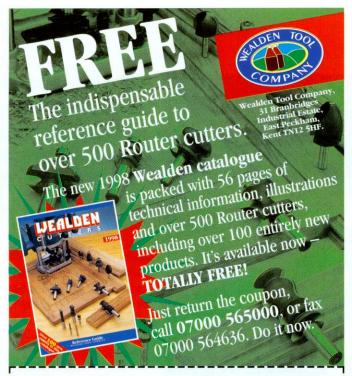
I can not emphasise enough the need for forward planning in a project such as this. Before taking any steps with the construction

I would spend a lot of thinking time and 'what if?' thoughts, quite often in bed before rising, or going to sleep at night.

Also I find paying a good price for your hardwood concentrates the mind no end!



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Around The Workshop



The V MACH and MINITED IN THE V MACH and MINITED IN THE INTERIOR OF THE INTERI

ntil recently the versatility and potential of a vacuum table were not readily apparent to me and I must confess that on opening the package, although I was impressed by the quality of manufacture, I wasn't very excited. I got more keen after browsing through the very clear instruction leaflet and by the time I'd watched the equally instructive video I was becoming enthusiastic. The video incidentally is not included in the price of the machines and is not supplied as a matter of course. It is however, available to users, I believe free of charge, if they find themselves in difficulties.

SETTING UP

The V MACH is designed to be used either fitted permanently to a workbench (for which easy instructions are included) or for use in a portable workstation such as a Black and Decker Workmate into which it can be fitted in seconds. The motor overhangs the end and

Mike Collins takes a look at the latest developments these two useful vacuum tables from lo tec pieman

allows easy access to both the on/off switch and the dump valve handle which controls the flow of air and thus the strength of vacuum.

DESIGN AND MANUFACTURE

The table is made in pressed steel and mdf and measures 860 x 510mm. On the upper surface or platen there is a series of suction cells arranged on either side of a central channel which is 60mm deep and 58mm wide. This channel is for the clearance of router cutters, saw blades, drill bits and the like when the tools are in use.

Each cell has a sprung ball valve onto which the work to be held is pressed, and each individual cell is surrounded by a rubber bed which seals the vacuum when the dump valve is engaged.

IN USE

Any workpiece to be held must be reasonably flat and impermeable otherwise either the seal cannot be made at the edges, or on the other hand, air will be drawn through the material preventing a vacuum from being formed. Similarly any workpiece must cover at least one complete cell in order for the table to grip and ideally should cover as many complete cells as possible for maximum efficiency. In use the suction is applied for holding, or released to adjust the workpiece in seconds by operating the valve at the end of the table.

USES

Working with machined-faced material directly onto the platen all manner of woodworking operations are possible, sawing, planing drilling and routing are undertaken

Mini Mach's control valve

PRICES

V MACH MINI MACH POWER VAC

absolutely no

cramps are

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place the roughly cut blank ontop of it. Using the bottom bearing tracer flute in the router simply run round to repeat the shape. Incredibly the workpiece is held down to the lightweight mdf by suction going through the mdf because it is air porous. The great beauty is that

needed and therefore there is nothing to get in the way of a smooth work flow, and any adjustment to the position of the workpiece is accomplished in seconds.

This technique can only be used with a template that covers a minimum of 3 arrays

of cells on the table.

When working with ultralight mdf cutting

fences can be gripped through the workpiece in the same

To hold irregular shapes that do

guides and manner, so again no awkward and time-consuming cramping to worry about.

not cover complete arrays of cells a lightweight mdf platen can be placed underneath the workpiece to cover the cells that otherwise would be left open.

VENEERING

Cold press veneering is also possible by utilising the porosity of lightweight mdf. With this technique we simply work as follows. Prepare the side to be glued in the normal way. A lightweight mdf platen slightly larger than the workpiece is placed on the table with a single sheet of newspaper over it. The veneer is placed on the newspaper glue side up and the workpiece is pressed firmly down onto it. Excess glue is expelled by the vacuum and the piece may be left for the glue to dry up to 4 hours (the maximum recommended running time for the motor before rest). Air bubbles which may be present are expelled by the constant vacuum pressure.

with ease and it is even possible to work with quite a considerable overhang but additional support should always be used with large sheets. Where the V MACH really scores

is with routing all round the edges

of a piece or in working from templates. Make up a template to the chosen shape from 12 to18mm thick lightweight mdf, set it on the table and



UPSTAND

Although I didn't have the opportunity to use one, I understand from the video that an upstand is available which sits at 90 degrees to the table top and exerts a similar vacuum pressure, This is especially handy for the working of edges. It is also extremely useful for gluing and jointing of panels not least because of its ability to hold all components square to each other throughout the gluing process.

The Mini MACH

smaller version of the V MACH this little tool shares many of its qualities and is basically used in the same way. It measures 450 x 300mm on the actual gripping surface but there is no central channel to accommodate router cutters, saw blades etc. This tool is really more designed for the diy buyer although for small routing work it is very nearly as useful as its bigger brother.

FIXING

This is not necessary. The table itself is designed to fit the bench top through suction and it is therefore essential to have it on a flat smooth surface. The instruction manual (again very clear) offers a suggestion for making a small mounting board which can be held in a vice. This manual however is nothing like so comprehensive as the one for the V MACH and first time buyers may be left to use their imaginations a little more.

POWER

In this case the machine is intended to be used with an ordinary domestic cylinder



vacuum cleaner for which a rudimentary but very satisfactory adaptor is included. Obviously the more efficient the vacuum cleaner the more efficient the holding powers.

PORTABILITY

This is a very handy little table which can easily be carried about with its built-in handle and can be hung up out of the way when not in use.

The MINI MACH power vac

Also available from the same company is this beefy little cylinder vacuum cleaner which is both ideal for powering the MINI VAC and for general workshop

It's light and easy to handle, can be moved around on castors and has a real appetite for hard work.

There is an optional paper bag system of debris colletion or it can all be contained in the body of the tool until emptying is required. It should be noted that although this looks like a wet/dry vacuum cleaner it is designed for dry work only. At the price it's certainly worth a look.

CONCLUSIONS

I found these very interesting products, and the V MACH especially so because of its versatility. At nearly £500 it's not cheap but it is well made and if you have a sensible use for it it's well worth looking at. The MINI MACH shares the quality of manufacture and for users routing small panels or working with hand tools which benefit from an area free from cramps this is both handy and inexpensive.

The POWER VAC is a good solid work horse which could easily earn its keep just as a vacuum cleaner for the workshop and still be a good buy.

My ideal combination would be a V MACH table with no integral power and a POWER VAC or some other power source which I could use as an independent unit and disconnect for other duties when required.

Whilst the veneering properties of the tool are very interesting from a technical point of view, I think many people would baulk at the idea of running a motor of up to four hours when a simple mechanical press might well do a similar job.

On balance then these are good tools but all the better if your needs suit their specific strong points, and these are mainly in the realm of easy and trouble-free work using the router.

FOR MORE INFORMATION

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Around The Workshop



Guide Bushes Inverted

have been using routers, with good quality cutters for some time now and have little to complain about.

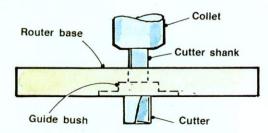
I realise, you do not have any control over the design of the router, but with the Elu 96E, I find there can be a slight problem when using the router hand-held.

The aperture in the router base is rather large for some operations and this results in the router tipping on the work, causing safety problems, as well as inaccurate, or 'wavy' cuts.

I overcome this problem by using my set of Trend guide bushes, fitted in reverse, so the base is flush.

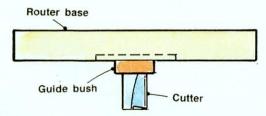
This did result in a loss in depth of cut, which is no real problem, as the cutter can be advanced in the collet a little, provided only light cuts are taken.

John Barr, Birmingham.



Arrangement with guide-bush inverted

Fig 1



Normal arrangement when using guide-bushes Fig 2

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Turning with Reg Slack

8th August

Subject to be confirmed

12th September

Subject to be confirmed

17th October

Subject to be confirmed

30th October - 31st October

Isaac Lord two-day show 28th November

Subject to be confirmed

12th December

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Not everyone can still leap about like a spring lamb, but Peter Badger has at least one answer for the garden

In The Garden



kneeler

any of us find it not so easy getting down and up again when kneeling to work on a boarder or other gardening job. If there is even a hint of rheumatism in the knees it is just about

impossible without something to lean on. This garden kneeler is the answer. The handles are high enough to allow you to gently lower onto the padded centre and to get onto your feet again when the job is done.

The boxes and loops at the sides will hold small tools,

packets of seeds, string and other gardening needs. The feet keep the kneeler level with minimum risk of marking the lawn. Anyone with kneeling problems would also find this aid useful indoors.

CONSTRUCTION

This is of softwood and exterior plywood, with a painted finish. The padding is a piece of plastic foam. The loops are webbing or even a discarded trouser belt wopuld do.

Suitable wood can be obtained from a builders' merchants, who will probably call it 'Baltic redwood', which is a species of pine.

USING THE ROUTER

The greatest section commonly available is likely to be a nominal 9in. (230mm) by 1in. (25mm), planed all round, which finishes about 8 1/2in. (215mm) by a full 3/4in. (19mm), which is what we want. There is some interesting



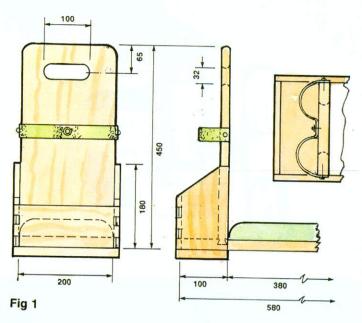


Cut hand hold between holes.

router work. For strength, the handles are joined to the base with dovetailed housing joints, for which you need straight and dovetail cutters. The hand holes and grip need well rounding over. The strips alongside the padding are also rounded and the plywood and feet can be chamfered.

HANDLES

Mark out these and the base. Cut the hand holes by drilling 1 1/4in. (32mm) holes at the ends and sawing away the waste. Round the edges of the hand holes and carry the rounding of the top of the grip about 5in. (125mm) down the sides.



The dovetailed housings can be 3/8in. (9mm) deep. Mark the handles and base, but use a dovetail cutter to prepare the ends of the handles first, so they can be used to check the grooves. Remove most of the waste from the grooves with a straight cutter, then use the dovetail cutter to undercut the sides until you get a push fit for the other parts.

Sand these parts, with particular attention to the hand holds, then assemble the

handles to the base, making sure the angles are square and the handles are parallel. Use waterproof glue.

THE PLYWOOD PARTS

These have to fit round the solid parts of the kneeler, so check sizes against the actual wood. Make the sides wide enough to cover the handle edges and extend enough for cutting the joints. The ends should similarly suit the width and joints. Divide the width of an end into four for the sizes of the finger joints.

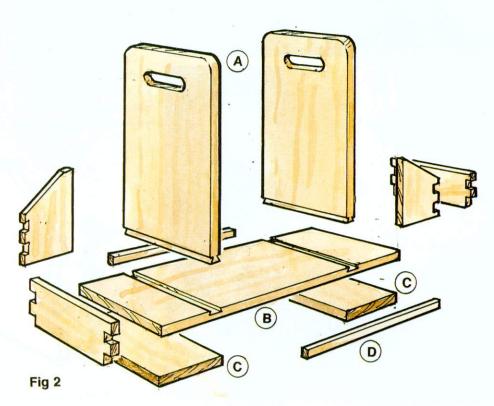
If you use waterproof glue it should be sufficient to assemble with 1in. (25mm) panel pins, to hold while the glue sets; otherwise use fine screws.

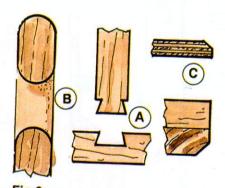
THE FEET

Plain blocks of wood with chamfered edges are used, nailed and glued underneath. Prepare two strips with rounded outer edges to fit between the plywood sides and cover the sides of the padding. Paint all wood before adding the padding and straps. A bright colour will help you locate the kneeler!

PADDING

A piece of plastic upholstery foam about 1 1/2in. (38mm) thick will do nicely. Cut it to be a tight fit between the handles and overlap about 1/4in. (6mm)





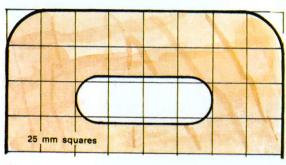
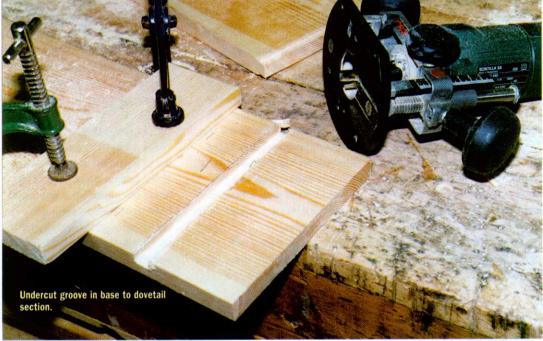
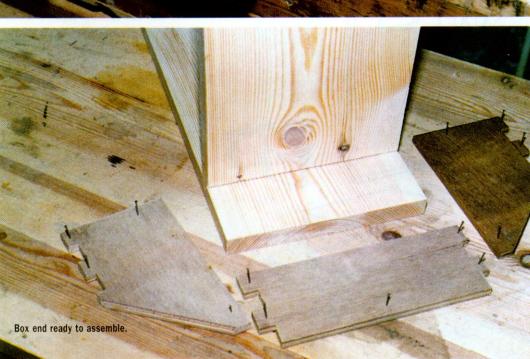


Fig 4

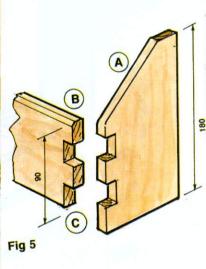


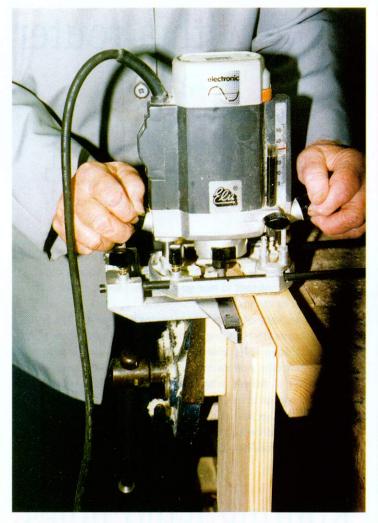


at each side. Bevel under the long sides to about half thickness. The most suitable covering material is plastic-coated fabric, which is waterproof.

Cut the covering cloth long enough to turn down between the foam and the handles and wide enough to wrap over the edges to be trimmed later. Work from opposite sides, pulling down to compress the edges of the foam and tacking. Work from the centre towards the ends, adjusting tacking to reduce visible creases. Tacks at 1in. (25mm) intervals should be satisfactory. Trim off surplus cloth and cover with the strips, nailed or screwed on.

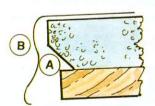
Straps may be webbing or leather about 1in. (25mm) wide. Fix them with screws and washers; either round-head screws and flat washers or





Extra block steadies router when cutting dovetail.

countersunk screws and cup washers. Arrange the loops to suit your needs, so trowel, fork, dibber and other things can be slipped through easily. You might have double loops at one end and a single large loop at the other end.



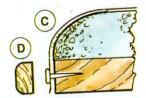
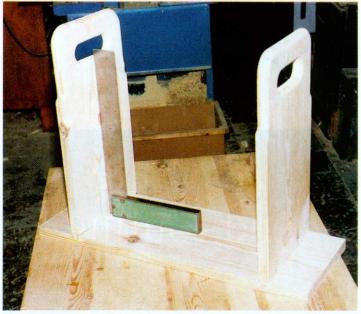


Fig 6

Cutting List

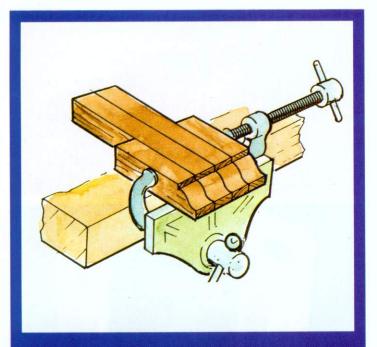
Inches (millimetres)

No.	L		W		T
1	23(580)	X	8(200)	x	3/4(19)
2	17(450)	X	8(200)	X	3/4(19)
2	9(230)	X	4(100)	X	3/4(19)
2	15(380)	х	3/4(19)	X	3/8(9)
4	7(180)	х	4 1/2(113)	X	3/8(9)
2	9(230)	X	3 1/2(90)	X	3/8(9)
	1 2 2 2 4	1 23(580) 2 17(450) 2 9(230) 2 15(380) 4 7(180)	1 23(580) x 2 17(450) x 2 9(230) x 2 15(380) x 4 7(180) x	1 23(580) x 8(200) 2 17(450) x 8(200) 2 9(230) x 4(100) 2 15(380) x 3/4(19) 4 7(180) x 4 1/2(113)	1 23(580) x 8(200) x 2 17(450) x 8(200) x 2 9(230) x 4(100) x 2 15(380) x 3/4(19) x 4 7(180) x 4 1/2(113) x



Check that assembled parts are square.





Accurate end routing

Using a router to mould across a group of ends, as in preparing a set of feet for example, calls for care if you are to get uniform results right across This is particularly so at the start and finish of a cut, as it is too easy to let the partially-unsupported router base wobble.

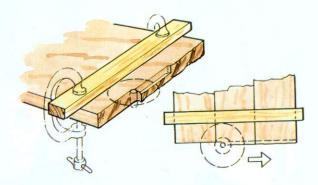
Like many other router users I put scrap wood each side of the important parts, so if the cut goes wrong, it will be in the scrap wood and the rest should be perfect.

I have a large G cramp which will hold many of my jobs and it can be held in the vice. I find this is all I need usually, but for long thinner pieces I use another cramp further back above the bench. For pieces that assemble too wide for my G cramp I use a bar cramp in the same way.

W. R. Johnson (Telford)



Plane with a router



I am never very happy about planing the ends of glued-up boards, as in a table top. I usually let the plane wobble, so the edge is out of square and often manage to tear up the grain. I find it easier and more accurate to use my router.

I set a guide piece back from the intended finished end line enough for the router base to run along it when using a straight cutter. If the end is already sawn fairly close to the line and the wood is not too thick, I set the cutter extension to slightly more than the thickness of the wood and trim the end in one pass. If there is much to come off, the ends are uneven or the wood is thick, I make a first cut set to half the thickness, or less and finish the end in two or three passes.

With this method the end finishes straight and square with a good surface ready for moulding or other treatment.

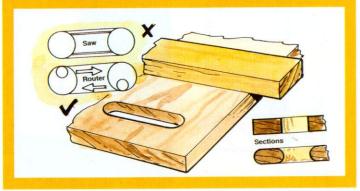
Stephen Fairburn (Exeter)

Routing hand holes

Hand holes for lifting are usually about 4in. long and 1 1/4in. wide. The common way of cutting them is to drill holes at the ends and saw between them. This is satisfactory except you have to follow the saw with chiselling and sanding. I find it is possible to do a better and quicker job with a router and a straight cutter about 3/8in. diameter.

Drill 1 1/4ins. holes at the ends of the slot. Use a guide strip cramped on to let you insert the cutter just touching the edge of a hole. Feed it across to the other hole, then re-position the guide strip and cut back the opposite edge the other way. This should leave you with hardly any cleaning-up of the edges. You can change to a rounding over cutter and complete a comfortable hand hole.

R. D. Foster (Maidstone)



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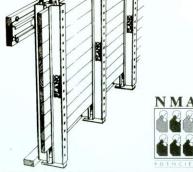
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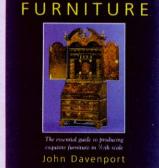
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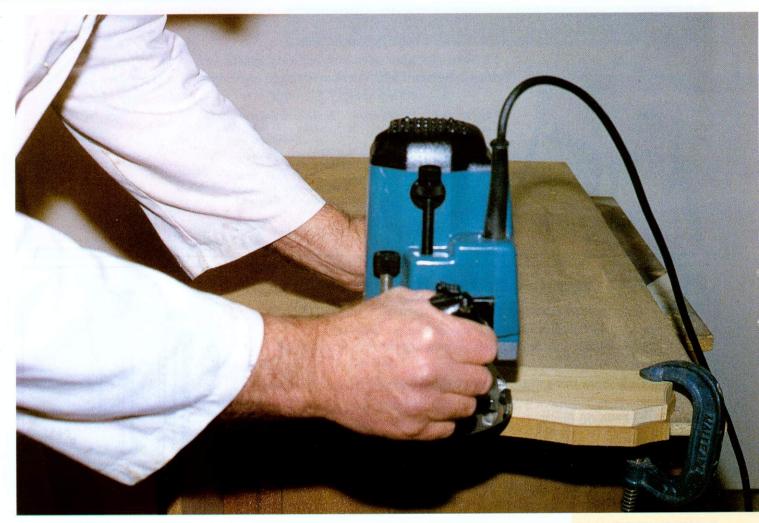
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Making MINIATUR



Makita 3612C

Gordon Warr tests out the extra heavy duty router from Makita

here are three routers listed in the Makita catalogue, all have high wattage motors, are rated as 1/2in. capacity, all are excellent tools with slightly different specifications, with the 3612C being the premier model with its 1850 watt motor.

The 3612C is classed as extra heavy duty and has variable no-load speed from 9000 to 23000 RPM operated by rotating a control at the top, a soft start feature and an electric brake. The base is a full circle of 160mm diameter and the body

will plunge up to 60mm. The plunge lock on facility is a lever alongside one of the handles, the other handle houses the switch. This is the double action type, before the main switch can be depressed with the fingers of the right hand, a small button on the top of the handle must first be depressed with the thumb.

The spindle has a plunge-lock which means only one spanner is required when tightening or slackening the collet, the nut which locks the collet has four flats on it rather than the more usual two, this makes use of the spanner much easier. The base

incorporates the usual three-step turret facility, this combines with a depth stop to control the depth of cut. This depth stop has a quick adjustment feature and a scale is calibrated onto the body as a guide to the setting made.

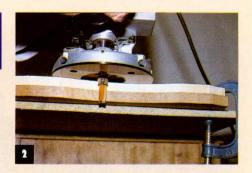
CHIP GUARD

A chippings' guard of plastic can be quickly fitted to the base and a dust extraction nozzle also of clear plastic is even quicker to locate within the base. A rather unusual feature of the base is the way in which the template guides are secured, these are held in place by spring loaded

- 2 Typical use of the 3612C for edge moulding
- 3 Clear vision when working
- 4 Using router to form a groove.
- 5 Forming trench with aid of a jig
- 6 Guide bush and cutter in place
- 7 Inserting guide bush into spring loaded holder
- 8 Connecting hose to router
- 9 Using router with template
- 11 Chipping's collection hood
- 12 Underside of router
- 13 Base details
- 14 Inserting 1/4 in. shank cutter and sleeve
- 15 Fine depth adjustment
- 16 The switch and safety button
- 17 Plunge lock lever

Around the workshop

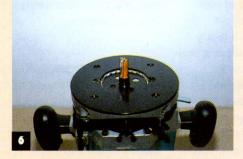










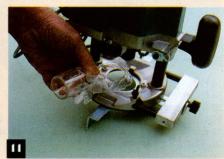






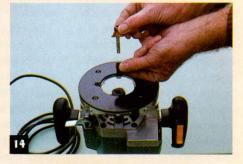




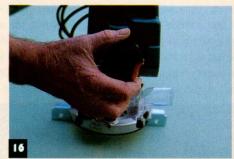


























- 18 Fine adjustment to fence
- 19 Ready for action
- 20 Plunge control
- 21 Variable speed control offers range from 9,000 to 23,000 rpm
- 22 Spindle lock makes cutter changing an easy operation
- 23 What you get for your money

clips which eliminate the use of screws and make mounting of a template guide an almost instant operation. Because the guides locate very accurately on their rim, this system of securing is very positive.

A straight guide is provided as standard. Adding this to the base follows the normal arrangement of locating the arms in holes and a micro adjustment facility is incorporated. Overall length of the fence is 240mm and four holes are provided enabling a wooden facing to be

added.

Overall initial impressions with this top-of-the-range router from Makita were very favourable, its very solid feel is confirmed by its weight of 6kg. One of the commonest uses of a router remains forming a decorative moulding to the edge and this is where I started my trials. Fitting a cutter is easy, especially if the base is first well distanced from the body giving plenty of space for using the spanner and setting the depth of cut is straight forward. Most mouldings can be

readily formed in one pass unless the wood is extremely hard, although it is always wise to first 'underset' then make a test cut before making final adjustments. I made edge cuts using cutters with roller bearings and those without and followed this with grooves formed down the face of the wood.

EDGE GUIDE

The straight edge guide cannot normally be used when making trenches, some other form of guiding the router is needed. While a guide to one side of the router base can be used, there is always the danger of the router running slightly off course. A guide which totally controls the router allowing only forwards and backwards movements is needed and I made a fully adjustable jig for this purpose some years ago. The left hand rail to this jig adjusts to suit different routers and once set is easily cramped the wood.

Just as easy the trench was formed, the wood offering negligible resistance to the forward movement of the router and the trench was cut in the proverbial jiffy.

A major use of a router is for template work, where repeat shaping can take place with ongoing accuracy.

I had only one guide plate available, this was the 16mm size so was ideal to match a 12mm cutter. What we did before double sided tape came along apart, from resorting to poor alternatives, I do not know, but my template was soon secured to the wood and the shape required quickly completed without any hiccups.

So I had completed a range of functions typical of the average workshop and the 3612C had performed these as I had expected from a tool produced by one of the world's foremost manufacturers. Makita place a high level of importance on quality and safety, not only is this router produced so as to satisfy the requirement of the CE regulations, it also reaches the criteria laid down by the British Standards Institute and is 'Kitemarked' accordingly. British Standard EN50144 relates to hand held electric motor operated tools and lays down that such tools must not have a lock-on switch. This might restrict some uses of the router, but underlines Makita's high priority to place safety above convenience.

QUALITY

Whereas manufacturers are now required by law to ensure their products comply with the CE regulations, the requirements laid down by the British Standards are only recommendations. Gaining the Kitemark, though, means a very high level of quality has been reached.

There is a good assortment of accessories available for this router. These include a steel carrying case, alternative sizes of collets and a trimmer guide assembly.

As well as the template guide I was using there are a further seven available, sizes from 10mm to 30mm.

Despite the limitations of this router, it is a meaty tool in the heavyweight class in every way and which my limited use suggests will give long and trouble free service.

Should accessories or attention to the tool be needed, Makita have an extensive network of agents to keep the smile on the owner's face.

List price of the 3612C is £467.65.

FOR FURTHER INFORMATION WRITE TO:

Makita (UK) Ltd., Michigan Drive, Tongwell, Milton Keynes, Bucks. MK15 8JD. Tel: 01908 211678 Fax: 01908 211400

Route to success... enter our £1,000 Competition

It's time to get into the workshop and make your router work for its living!

One of the highlights of any woodworking show is the display of competition entries and this year we are looking for entries to a new competition, for any project predominantly made with the router. It can be a small jewellery box or a dining table.

Entries will be displayed and judged at the International Woodworking and Woodturning Exhibition at the NEC from 9th-11th October.

What can I enter?

- Any project that is your own design and that has been made this year, predominantly using a power router.
- The entry must not have been exhibited at any other woodworking show.
- If your project is more than 2m long and 1m wide, please phone our editorial office on
 01322 660070 to arrange delivery to our offices.

How do I enter the competition?

- 1. First, fill in the Registration Form (to arrive no later than 18th September) to let us know you want to enter the competition. Please send a photograph of your project as well.
- 2. Then, send or bring in your project to Nexus House, Azalea Drive, Swanley, Kent BR8 8HY.
 Remember to include your Entry Form.
 This must arrive here no later than Friday 25th September.
- 3. All entrants will receive a free entry pass to the show for the Sunday to attend the prizegiving and collect their pieces.

The judging

All the entries will be awarded marks for the following criteria:

- Creative use of the router, including jigs and templates
- Craftsmanship
- Design



Sponsored by DeWalt Power Tools

Return of entries

Entries must be collected from the NEC Exhibition Hall after 5.00pm on the last day of the show (Sunday 11th October).

Please ensure you entry is well packed and please write your name and address and the name of the competition clearly on the package.

If you wish to make alternative arrangements for delivery, please phone the editorial offices (01322 660070).

REGISTRATION FORM

PLEASE NOTE THIS IS NOT AN ENTRY FORM

Send this competition to: Routing Competition, Nexus House, Azalea Drive, Swanley, Kent BR8 8HY.

Postcode	Tel no:	
Description of project.		
Wood used		

Address

Date.....Signature

Estimated value for insurance

Please complete this form and return it to arrive no later than 18th September 1998.

ENTRY FORM

THIS FORM MUST ACCOMPANY THE PROJECT

To be sent with your project to: Routing Competition, Nexus House, Azalea Drive, Swanley, Kent BR8 8HY.

Name
Address
PostcodeTel no:

Description of project.....

Wood used.....

Date.....Signature

Rules

- 1. The competition is open to readers resident in Great Britain, Channel Islands, Eire and the Isle of Man.
 - 2. All entries must arrive before the closing date.
 - 3. All entries will be displayed at the NEC Exhibition between 9th and 11th October.
 - 4. The judges decision is fina
 - 5. All projects must the be the entrant's own work
 - 6. Photographs of entries may be used in Nexus Woodworking magazines.

Around The Home



Using a Dremel, Alan Watters shows how to make a miniature '1850s' corner chair

he chair featured is made of mahogany and is based on a design that was common to the Victorian period. The general idea of the design was that the chair could be put out of the way in a room which would create more space whilst still remaining a functional piece of furniture. The chair also features a drop in seat which is covered with blue velvet, sometimes the corner chair would have just a wooden panel, but this particular style, though simple, is quite pleasing to the eye and fits in well with most modern furniture.

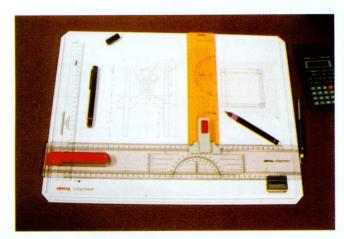
The scale that I selected for this piece as 1/5th, because this allows the detail to be displayed to its full potential. Because the joints that used in

the full sized corner chair are also used in the miniature it proves to be a good challenge for those of you with one of the mini routers that are available. I find the range of precision tooling by Dremel to be very good for this type of work.

The first job is to decide what scale you will be making the corner chair in, the cutting list that I have included is for



Circa 1850



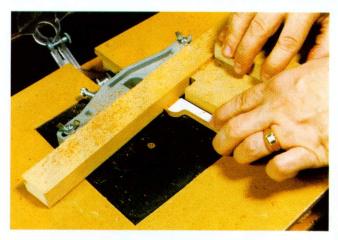
Make up your plans as accurately as possible



Turned legs being mortised out on a drill press with a 2mm rotary rasp fitted



Shapes taken from the plan and drawn on paper, then spray mounted and stuck onto the wood



Tenons being routed using a jig

1/5th. Allow extra for joints etc. Having decided that, make up your plans as accurately as possible. The next step is to cut the back and side legs to their respective lengths and then mount in a lathe. Turn to the shape required and give a very light papering with garnet paper, remember to leave a small spigot on the top of the turnings to allow the fitting of the arm rest later. The three turned legs can now be mortised out on a drill press with a 2mm rotary rasp fitted. The process of machining the mortises can be carried out as follows. Take a small machine vice and mount one of the legs in the vice, now a fence can be clamped to the drill table in a position that will enable the cutter to enter the leg at the

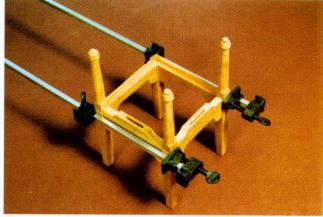
correct position. Mark the beginning and the ending of your mortises and proceed to machine them out. Having got the first one correct, leave the fence set in its current position and complete the other legs. As long as the vice is run along the fence at all times all the mortises will be cut correctly. The taper on the legs can now be planed onto them by the use of a shooting board. Mark the angle of the taper on to a piece of card and cut out a template, this can now be transposed onto the inside surfaces only of each leg and the angle can be accurately marked onto all the legs. When planing the angles onto the legs, they can be 'backed up' with a piece of squared MDF or similar. This allows them to be held safely and all that is needed is to plane up to your marked line.

The front and back aprons are now made up from 8mm mahogany, note that the front aprons have a rebate worked on them on their top inside edges. This is what the seatboard rests on when installed. The shape of the aprons can be taken from the plan and drawn onto some paper, this can then be sprayed on the back with low tack adhesive and then stuck down onto your wood. The marked shape can then but cut out on a fret saw and then the tenons have to be worked on their ends.

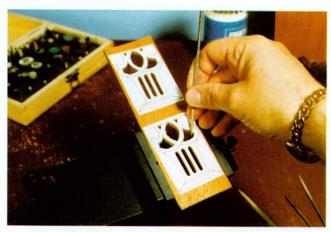
This is a situation where the Dremel router table proves to be a most useful companion in the workshop. With the router attached to the table, set the cutter to protrude above the

surface of the router table by 2mm. Set the fence to allow the tenons to be routed on all of the aprons, it will be seen from this that the use of a jig greatly simplifies the task but also makes the operation much safer. When this is completed, test the fit of all the components so far made and then glue and clamp them together. Check that everything is square and leave undisturbed for the glue to set completely.

If you have drawn the plans full size to their respective scale, photocopies can be made and the part with the splats on can be stuck onto 3mm mahogany. First, drill out as much as possible of the inner portion of the splats and then with a small burr mounted in a flexible drive, take off any remaining material. The rather long job of cleaning up



Check that everything is square and leave glue to set completely



Cleaning edges with a selection of needle files



Chair airbrushed with a thinned solution of shellac

these edges with a selection of needle files can now begin. It, makes sense to do this now as when they are cut out complete these pieces are rather fragile. After the filing is complete they can then be cut out with the fret saw.

The tenons now have to be formed onto the splats, these mush have an angle of approximately 82 degrees to allow them to lean away from the aprons and consequently up into mortises on the underside

of the arm rest.

The arm rest can be cut from 4mm stock and when you are happy with the shape cut out the mortises for the legs and the spats. The back rest can now be cut from 10mm mahogany and allowing for a slight over hang, glue and clamp the two together. When set, work the required shape with a selection of files and garnet paper.

The remaining parts of the chair can now all be joined together, again checking the fit

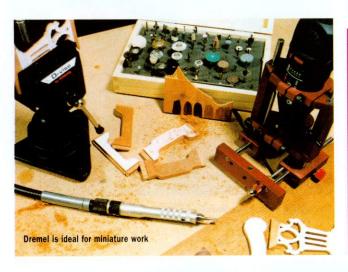
of the pieces and making sure all is square with no twists. All that remains now is to glue two cleats to the inside back aprons on which the seatboard rests. Make the seatboard which is from 3mm thick stock and simply sandwich a piece of foam rubber between the board and the velvet which is fixed to the board with hot melt glue.

The finished chair was first

airbrushed with a thinned solution of shellac which when dried was de-nibbed. A stain which was compatible with cellulose lacquer was then mixed with a satin lacquer, this was in turn airbrushed onto the chair. This particular finish imparts a very realistic look and feel to the finished piece which an be refined further by careful polishing with a good quality wax.



Completed chair



Cutting List

Back aprons	2	8 x 29 x 69
Front aprons	2	8 x 24 x 69
Front leg	1	10 x 10 x 84
Back and side legs	3	10 x 10 x 84
Seatboard supports	2	3 x 3 x 75
Splats	2	3 x 55 x 70
Arm rest	1	4 x as to pattern
Back rest	1	10 x as to pattern
Seatboard	1	3 x 77 x 77

Where to Buy Routers

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Atlas Copco Tools Limited. Swallowdale Lane. Hemel Hempstead, Hertfordshire, HP2 7HA.

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Fax. 01895 838802

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Model ref. number
Watts imput
230 Volt
110 Volt
Fixed rpm
Variable rpm
Spindle lock
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Dust hood with spout
Max plunge depth
Collett chuck size
Collets supplied as accessories
Net weight (KG)

List price Ex. VAT.

Router make

BOSCH		
OF400A		
100		
'es		
No		
27000		
No		
No		
Vo		
es es		
18		
_/4		
Bmm		
7		

возсн	B&D	
POF500A*	KW780	
400	600	
Yes	Yes	
No	No	
27000	30000	
No	No	
No	Yes	
No	No	
Yes	Yes	
52	55	
1/4	6,8mm, 1/4	
3mm	None	
2.3	3.0	
£111.28	£114.67	

HITACHI ZK2008 550 Yes No 27000 No No No No 52 1/4 6mm, 8mm 2.3 £122.00

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B&D

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RYOBI

RE120

570

Yes

No

No

No

No

No

55

1/4

None

2.2

£159.00

16-26000

Nouter make
Model ref. number
Watts imput
230 Volt
110 Volt
Fixed rpm
Variable rpm
Spindle lock
Dust deflector only
Dust hood with spout
Max plunge depth
Collett chuck size
Collets supplied as accessories
Net weight (KG)

List price Ex. VAT.

Router make

Dub	TINO
KW780E	FR77
600	850
Yes	Yes
No	Yes
No	2400
8-30000	No
Yes	No
No	No
Yes	Yes
55	50
6,8mm, 1/4	1/4,
None	None
3.0	3.1

VIRUTEX	BOSCH
FR77C	POF600ACE
850	600
Yes	Yes
Yes	No
24000	No
No	12-27000
No	No
No	No
Yes	Yes
50	52
1/4, 3/8	1/4
None	8mm
3.1	2.3
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outing

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Making Designer Furniture.

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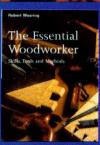
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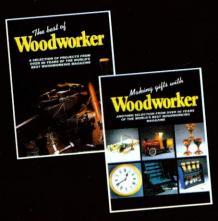
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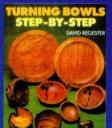
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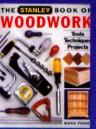


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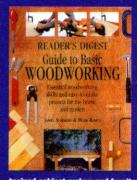


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These notes and sketches are for the making of a full sided Elm wheelbarrow. Code: WW321 ONLY £6.50 UK £7.00 Overseas

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Turn the garden waste into a useful bye product. Simple construction using plank and squared section. The prototype was made of old palette timbers. Code: WW416 ONLY £3.80 UK £4.30 Overseas

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This fully folding table has an attractive sunray' pattern top. Teak or Oak if to be left out but treated softwood is quite practical.

Code: WW423 UNIA E3'80 fik £4 30 Overseas

Garden Chaise Long

A portable, fold away leisure chair of squared section timber. any hardwood being suitable. Code: WW304 ONLY £3.80 UK £4.30 Overseas

Garden Furniture Suite

An armchair and table set that would grace any garden. Teak option, closely followed by Iroko, but Western Red Cedar is a much more reasonable alternative. Some mortise and tenon joints, but many simply screwed. Code: WW309 ONLY £5.75 UK £6.25 Overseas

Garden Seat

A sturdy piece designed by David Bryant. Code: DB234 ONLY FR.70 UK £7.20 Overseas

Gazebo

A neat summer house in the Victorian style. The plans provide full structural detail. Code: BG02 ONLY £5.75 UK £6.25 Overseas

Deck Chair

Notes taken from an early Woodworker for a standard deck chair, plus canopy if required. Code: WW417 UNIA &3 80 IIK £4.30 Overseas

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A chalet suitable for a large dog or small child. Simple hammer and nails construction Cedar is the natural material for long life. Code: WW418

ONLY £3.80 UK £4.30 Overseas

Garden Seat & Chairs

This simple design for an armed seat and chair appeared many vears ago in Woodworker, Oak or Teak were recommended but Red Cedar is used by many. Code: WW310 £4.30 Overseas



Garden Seat 1

A good solid seat with arms, designed to be made in Oak. Plain mortise and tenon joints. Code: WW419 ONLY £3.80 UK £4.30 Overseas

Garden Shed

A single pitch roof on a sawn timber frame covered in Shiplan make this an eas piece to build ideal as a small workshop or store Code: WW422 ONLY £5.75 UK FR.25 Overseas

Picnic Table & Seats

The set for the car boot. Totally slatted construction for table, chair and stools. Nice and easy to make. Code: WW424 ONLY £3.80 UK £4.30 Overseas

ner House

The hexagonal frame can be built as six separate sections in the workshop, then bolted up together on site. Cladding is in Weather hoard Code: WW425 ONLY £5.75 UK £6.25 Overseas

Wheelbarrow 1 Lincolnshire

The traditional heavy wooden wheel barrow with an open back end. Detailed notes on making the wheel. Code: WW427 ONLY £4.35 UK £4.85 Overseas

Windmill Ornament

This model is almost too good to leave out in the garden. **Both sails and fantail** work, so the mill will follow the wind. The kids will love it (if they are allowed near!). Code: WW428 ONLY £4.35 UK £4.85 Overseas

Patio Chair & Seat

Traditional country inn garden benches with single plank seat and back, and simulated peg construction. A very easy pair to build. Code: ADW122 ONLY FR 45 IIK £8.95 Overseas

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Routers from £160-£189







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Festo Limited. Automation House, Harvest Crescent. Ancells Business Park, Fleet. Hampshire. GU13 8XP.

Tel. 01252 775000 Fax. 01252 775101

Router make Model ref. number Watts imput 230 Volt 110 Volt

Fixed rpm Variable rpm Spindle lock **Dust deflector only Dust hood with spout** Max plunge depth N/A Collett chuck size 1/4 Collets supplied as accessories Net weight (KG) 1.4 List price Ex. VAT. £169.00

RYOBI	
TR50	
500	
Yes	
No	
33000	
No	
No	
No	

	3620
	860
	Yes
	No
	24000
	No
	No
	No
	Yes
	35
	1/4, 3/
	8mm
	2.4
)	£173.00

MAKITA HITACHI 3703 TR6 350 440 Yes Yes Yes Yes 30000 30000 No No No No Yes No No No N/A N/A 6mm, 1/4 1/4 None None 1.5 2.7 £183.00 £178.00

FREUD

FESTO

Freud Tooling UK Limited, Unit 3. **Emmanuelle Trading** Estate, Springwell Road, Leeds. Yorkshire, LS12 1AT Tel. 01132453737

Fax. 01132 438883

Routers from £190-£201











Precedent Drive, Rooksley, Milton Keynes, Buckinghamshire. MK13 8PJ.

Hitachi Power Tools.

HITACHI

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Router make Model ref. number Watts imput 230 Volt

110 Volt Fixed rpm

Variable rpm Spindle lock

Dust deflector only Dust hood with spout

Max plunge depth

Collett chuck size Collets supplied as

Net weight (KG)

List price Ex. VAT.

VIRUTEX	DEV
FR78C	DW
850	600
Yes	Yes
Yes	Yes
No	300
8-24000	No
No	Yes
No	Yes
Yes	Yes
50	N/A
1/4, 3/8	6.8
None	Non

3.1

190.00

- Three
DEWALL
(A)

DEWALI	
DW670	
600	
Yes	
Yes	
30000	
No	
Yes	
Yes	
Yes	
N/A	
6.8mm, 1/4	
None	
1.7	

£195.00

DEWALT	AEG
DW613	OFE630
800	630
Yes	Yes
Yes	No
27000	No
No	10-27000
Yes	Yes
No	No
Yes	Yes
35	50
1/4	1/4
6, 8mm	None
2.7	3.3

201.00

199.00

HOLZ HER

ToolPak Power Programme, Cheetham Tool Group, Rhosddu Industrial, Estate, Wrexham. Clwyd, LL11 4YL

Tel. 01978 291166 Fax. 01978 290068

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Routers from £201-£222

MAKITA

Makita (UK) Limited. Michigan Drive, Tongwell, Milton Keynes, Buckinghamshire, MK15 8JD.

Tel. 01908 211678 Fax. 01908 211400

Fax. 01703 260784









METABO

Draper Limited, Hursley Road, Chandlers Ford, Eastleigh, Southampton. Hampshire. S053 1YF

Tel. 01703 266355

Router make
Model ref. number
Watts imput
230 Volt
110 Volt
Fixed rpm
Variable rpm
Spindle lock
Dust deflector only
Dust hood with spo
Max plunge depth

accessories

Net weight (KG)

ut Collett chuck size Collets supplied as List price Ex. VAT.

HITACHI	
M8	
800	
Yes	
Yes	
25000	
No	
Yes	
No	
No	
50	
1/4	

6mm, 8mm

2.7

215.00

OFSE2000 720 Yes Yes No No 8-24000 No Yes No No Yes 75 1/2 1/4, 8mm

AEG OFS720 720 Yes Yes No 25000 No Yes Yes Yes Yes YAS 50 50 1/4 1/4, 8mm 6mm 6mm, 8mm 2.5 2.7

FESTO OF900Plus 720 26500

222.00

PORTER CABLE

Hamilton Power Products, PO Box 2355. Colchester, Essex, CO3 5FY.

Tel. 01206 762470

RYOBI

Ryobi Power Equipment (UK) Ltd, Pavilion 1. Olympus Park Business Centre, Ouedgeley. Gloucestershire.

Tel. 01452 724777 Fax. 01452 727400

Fax. 01206 760537



List price Ex. VAT.

Picture unavaiable SS



2.5

219.00



219.00



GL2 6NF.

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at tim
of pres

ELU

225.00

Nouter make
Model ref. number
Watts imput
230 Volt
110 Volt
Fixed rpm
Variable rpm
Spindle lock
Dust deflector only
Dust hood with spout
Max plunge depth
Collett chuck size
Collets supplied as accessories
Net weight (KG)

	HOLZ HER
267K	2355
	720

LLO	HOLL HER	
MKF267K	2355	
600	720	
Yes	Yes	
Yes	Yes	
30000	25,000	
No	No	
Yes	Yes	
No	No	
Yes	Yes	
N/A	50	
6,8mm, 1/4	1/4	
None	None	
2.2	2.7	

228.00

RYOBI
R151
750
Yes
Yes
27000
No
No
Yes
No
50
1/4

6mm, 8mm

2.8

229.00

DEWALT
DW620
750
Yes
No
24000
No
Yes
No
Yes
55
1/4
6mm, 8mm
2.8

230.00

Routers from £231-£272











out

DEWALT	
DW620L	
900	
Yes	
Yes	
24000	
No	
Yes	
No	
Yes	
55	
1/4	
6mm, 8mm	
3.1	
240.00	

FESTO
OF900E Plus
900
Yes
No
No
10-22000
Yes
Yes
Yes
50
1/4, 8mm
6mm
2.7
266.00

SKIL	HITACHI
1875U1	M8V
1400	800
Yes	Yes
No	Yes
No	No
8-22000	10-25000
Yes	Yes
Yes	No
No	No
63.5	50
1/4, 1/2	1/4
12mm	6mm, 8mm
4.5	2.8
269.00	272.00

Where to Buy Routers

SKIL

Skil Limited. PO Box 98. Broadwater Park. North Orbital Road, Denham, Uxbridge, Middlesex, UB9 5HJ.

Tel. 01895 838743 Fax. 01895 838802

STAYER

Stayer Power Tools. Unit 9, Guildford Industrial Estate. Deaconfield, Guildford GU2 5YT.

Tel. 01483 454502 Fax. 01483 454415







Picture unavaiable at time of press



BOSCH Router make AEG ELU DEWALT Model ref. number GOF 900ACE OFSE850 MKF67 621K Watts imput 900 850 600 900 230 Volt Yes Yes Yes Yes 110 Volt Yes No Yes Yes Fixed rpm No No 24000 No Variable rpm 12-24000 8-25000 No 8-24000 Spindle lock Yes Yes No Yes **Dust deflector only** Yes No No No **Dust hood with spout** Yes Yes No Yes Max plunge depth 50 N/A 55 Collett chuck size 1/4 1/2 1/4 1/4 Collets supplied as 6mm, 8mm 6mm, 8mm 6mm, 8mm 6mm, 8mm accessories Net weight (KG) 3.5 2.5 3.3 2.8 List price Ex. VAT. 279.00 279.00 280.00 280.00

WATFORD

Watford Routers, C/O William Distributors, 108 Burghley Road, Peterborough, Cambridgeshire, PE1 2QE

Tel. 01733 54352 Fax. 01733 555275

VIRUTEX

Ney Limited, Falkland Close, Charter Avenue Ind. Estate. Tile Hill, Coventry, CV4 8UA

Tel. 01203 694794 Fax. 01203 695005 Where to Buy Cutters

AXMINSTER POWER TOOL CENTRE

Axminster, Devon EX13 5DZ

Tel. 01297 33656

BJR INTERNATIONAL

266 Harrogate Road, Bradford, BD2 3RG

Tel. 01274 626805

CHARNWOOD

1-3 Rowan Street, Leicester LE3 9GP

Tel. 0116 251 1550

CMT TOOLS (UK)

8 Wainwright Road, Bexhill-on-Sea Sussex TN39 3UR

Tel. 01424 730674

FREUD TOOLING UK

Unit 3 Emmanuel Trading Estate, Springwell Road, Leeds LS12 1AT

Tel. 0113 245 3737









Router make	FREUD	DEWALT	METABO	MAKITA
Model ref. number	FT2000E	DW621KL	0F528	3612
Watts imput	1900	1100	500	1650
230 Volt	Yes	Yes	Yes	Yes
110 Volt	Yes	Yes	Yes	Yes
Fixed rpm	No	No	27000	22000
Variable rpm	8-22000	8-24000	No	No
Spindle lock	Yes	Yes	Yes	Yes
Dust deflector only	No	No	Yes	Yes
Dust hood with spout	Yes	Yes	Yes	Yes
Max plunge depth	70	55	50	60
Collett chuck size	1/2, 1/4	1/4	1/4	1/2
Collets supplied as accessories	3/8	6mm, 8mm	3,6, 8mm, 1/8	None
Net weight (KG)	6.0	3.2	3.0	5.8
List price Ex. VAT.	290.00	310.00	312.00	328.00

Routers from £328-£339









Router make	MAKITA	возсн	RYOBI	HITACHI
Model ref. number	3612BR	GOF1300ACE	R502	M12SA
Watts imput	1600	1300	1600	1600
230 Volt	Yes	Yes	Yes	Yes
110 Volt	Yes	Yes	Yes	Yes
Fixed rpm	23000	No	24000	22000
Variable rpm	No	8-22000	No	No
Spindle lock	Yes	Yes	No	Yes
Dust deflector only	No	Yes	Yes	No
Dust hood with spout	Yes	Yes	Yes	No
Max plunge depth	65	60	60	62
Collett chuck size	1/4, 3/8, 1/2	1/4	1/4, 3/8, 1/2, 8mm	1/4, 1/2, 3/8
Collets supplied as accessories	None	1/2, 3/8, 6, 8, 12mm	None	6mm, 8mm
Net weight (KG)	5.7	4.8	5.0	5.2
List price Ex. VAT.	328.00	329.00	329.00	332.00

Where to Buy **Cutters**





ROSCH



at time of press

Router make
Model ref. number
Watts imput
230 Volt
110 Volt
Fixed rpm
Variable rpm
Spindle lock
Dust deflector only
Dust hood with spout
Max plunge depth
Collett chuck size
Collets supplied as accessories
Net weight (KG)
List price Ex. VAT.

RYOBI		
R600N		
2050		
Yes		
Yes		
22000		
No		
Yes		
Yes		
Yes		
60		
1/4, 3,	/8, 1/2	
None		
6.2		

ВОЗСП
GOF1600A
1600
Yes
Yes
25000
No
Yes
Yes
Yes
75
1/4, 1/2
6,8, 12mm, 3/8
0,0, 1211111, 3/0
5.7
339.00

METABO	ELU
OF1028	M0F131
1010	1300
Yes	Yes
Yes	Yes
27000	22000
No	No
Yes	Yes
Yes	No
Yes	Yes
50	62
1/4	1/4
3,6, 8mm, 1/8	3/8, 1/2, 10
3.3	4.8
344.00	350.00

Picture unavaiable

KWO TOOL (UK) LTD

4 Strawberry Vale, Vale Road, Tonbridge Kent TN9 1SJ

Tel. 01732 364444

TITAN CUTTER

M&M Distributors Ltd.. PO Box 128, Bexhill-on-Sea. Sussex TN40 2QT

Tel. 01424 216897

Routers from £370-£395



339.00







& 12mm

Router make	FESTO	METAB0
Model ref. number	OF2000 Plus	OFE1229
Watts imput	1600	1200
230 Volt	Yes	Yes
110 Volt	No	Yes
Fixed rpm	25500	No
Variable rpm	No	5-25500
Spindle lock	Yes	Yes
Dust deflector only	Yes	Yes
Dust hood with spout	Yes	Yes
Max plunge depth	65	50
Collett chuck size	1/2, 8, 12mm	1/4
Collets supplied as accessories	1/4, 3/8, 10mm	3, 6, 8mn
Net weight (KG)	5.1	3.4

370.00

1200
Yes
Yes
No
5-25500
Yes
Yes
Yes
50
1/4
3, 6, 8mm, 1/8
3.4
371.00

HITACHI	BOSCH		
M12V	GOF1700ACE		
L850	1700		
/es	Yes		
/es	Yes		
No	No		
3-20000	8-22000		
/es	Yes		
No	Yes		
No	Yes		
62	75		
1/4, 1/2, 3/8	1/4, 1/2		
6mm, 8mm	6,8, 12mm, 3/8		
5.3	5.8		
389.00	395.00		

TITMAN TIP TOOLS

Kennedy Way, Valley Road, Clacton-on-Sea Essex CO15 4ABT

Tel. 01255 220123

TREND MACHINERY & CUTTING TOOLS

Penfold Works, Imperial Way, Watford, Herts WD2 4YF

Tel. 01923 249911

WEALDON TOOL COMPANY

31 Branbridges Industrial Estate, East Peckham, Kent TN12 5HF

Tel. 0700 565000

List price Ex. VAT.

Routers from £398-£449











Router make
Model ref. number
Watts imput
230 Volt
110 Volt
Fixed rpm
Variable rpm
Spindle lock
Dust deflector only
Dust hood with spout
Max plunge depth
Collett chuck size
Collets supplied as accessories
Net weight (KG)
List price Ex. VAT.

MAKITA
3612C
1850
Yes
Yes
No
9-23000
Yes
Yes
Yes
60
1/2
1/4, 3/8
6.0
398.00

RYOBI
RE600N
2050
Yes
Yes
No
10-22000
Yes
No
Yes
60
1/4, 3/8, 1/2, 8mm
None
6.2

399.00

ELU

MOF 112



420.00

METABO OF2000E Plus OF1612 1600 Yes No Yes 24000 No 12-22000 No Yes Yes Yes Yes Yes Yes 65 80 1/2 1/2, 8, 12mm 1/4, 3/8, 10mm

5.1

436.00

6, 8, 12mm, 1/4, 3/8 449.00



DEWALT







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Model ref. number
Watts imput
230 Volt
110 Volt
Fixed rpm
Variable rpm
Spindle lock
Dust deflector only
Dust hood with spout
Max plunge depth
Collett chuck size
Collets supplied as accessories
Net weight (KG)
List price Ex. VAT.

Router make

DW625L	
1850	
Yes	
Yes	
No	
8-20000	
Yes	
No	
Yes	
65	
1/4, 1/2	
6, 8, 10 & 12mm, 3/8	
5.1	
450.00	
430.00	

2000
Yes
No
18000
No
M12x1
6, 8,10 & 12mm, 3/8 1/2
7.3
465.00

МЕТАВО	PORTER CABLE
OFE1812	7539
1800	2423
Yes	No
Yes	Yes
No	No
8-22000	10-21000
Yes	No
Yes	No
Yes	No
80	76
1/2	1/2
6, 8, 12mm 1/4, 3/8	1/4,3/8, 6, 8,10,12
5.1	7.8
512.00	514.00

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£339

Ryobi RE601 1/2"

£262



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Ryobi RE155

Electronic 1/4"

£180



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kend puts you on Co a guide to their sponsored routing courses

Unclear about what a router does? Do you know a little but want to know more? Why not go on a routing course and release those hidden

woodworking talents. Here is a quick guide to Trend's sponsored routing courses.

Dressing table top drawer and mirror made on the Craft Supplies course



ificate

Two Day Courses June 29-30 July 6-7, 13-14, 20-21, 27-28

Course Prices

Two Day £150

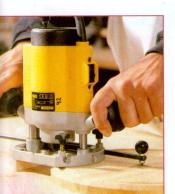
COURSE DATES

One Day Courses July 4 & 11 Aug 15

Course Prices

One Day

£60





NORTHERN CRAFTS Power & POWER TOOL CO.

214, Waterloo Road, Blackpool, Lancs, FY4 3AB Tel: 01253 400066 Contact: Alan Goodwin

Course Details: Located close to Blackpool town centre and British Rail stations, this 2 day course deals with router control and discipline, highlighting all the safety aspects, identifying the features and includes in-class videos. The project involves the construction of an occasional table, acquainting

students with the use of the Router Table to produce grooves and tenons and the Trend Routerlathe for turning the legs. Accommodation can be arranged by the course organiser who also provides lunch and refreshments. Other courses also available. Lecturer: Paul Wenlock



ROY SUTTON'S

Routing Courses CENTRE at the Apple Craft Centre

Selling Road, Macknade, Faversham, Kent MEI3 8XF Tel: 01227 373297 Contacts: Roy Sutton/John Farrington

Course Content: Set amongst the farmlands and oasthouses of Faversham Kent, this renowned and respected one-day course has returned by popular demand, continuing its traditional format of router use and safety, encouraging confidence in students. A combination of expert lectures, videos, slideshows and practical router use enables the students to produce a bread board using the router table as well as

Routing the bread board with a beam trammel

basic router applications. Personal tuition is available as well as on site turning courses. The showroom is well stocked with machinery, cutters, jigs, timber and all types of woodworking accessories. Gallery, restaurant and farm

shop are on site.

Lecturer: Wayne Crickmore





CRAFT SUPPLIES ACADEMY

The Mill, Millers Lane, Dale, Nr Buxton, Derbyshire SK17 8SN

Tel: 01298 871636 Contact: Eve Middleton

Course Content: Situated in the heart of the Peak district, this two day course features an introduction to the router, associated safety aspects, features and accessories. The project involves the construction of a dressing-table top drawer with elliptical pivot-hung mirror (see picture top left). It incorporates hand-held operations, tenoning, dovetailing, rebating and moulding techniques. The course also introduces the use of the dovetail jig, the

ellipse jig and table routing. Accommodation is available on site. Other courses are also available and students can take advantage of the book and video library, the crafts gallery and showroom. Lecturer: Bob Lambert

COURSE DATES 1998

£150

Two Day Courses Aug 12-13 July 1-2 Sept 2-3 Oct 1-2

Course Prices

Two Day

Using the Trend Mini Ellipse Jig



EDINBURGH'S Telford College

EDINBURGH'S TELFORD COLLEGE

Crewe Toll, Edinburgh, EH4 2NZ Tel: 0131 332 2491 Ext. 2229 Contacts: Stuart Telford/Derek Brown

n the UK



Course Content:

Edinburgh's Telford College have 3 different one-day courses. 'Basic Routing' describes the versatility and accuracy of the hand-held portable router, covering basic principles, uses, features and safety. The second course takes routing to a more advanced level and

introduces the router table and the various multifunctional jigs. The third course, designed for tradespeople, demonstrates commercial jigs manufactured for trade and industry i.e. the stair jig, hinge jig and kitchen worktop jig.

Lecturers: Stuart Telford & Gregor Allen

COURSE DATES 98

One Day Courses

Course Prices

One Day

£75

Basic/Advanced/Trade

AUSTIN **EAMES**



Plas Acton Precinct, Pandy Lane, Wrexham, Clwyd, LLII 2UB Tel: 01978 261095

Contacts: Peter/Richard Eames

Course Content: Located in North Wales the courses attract novices to routing, the basic user and those wishing to learn more. The courses deal with health and safety, types of cutters and jigs, template work and maintenance. Lecturer: Emrys Owen

COURSE DATES 98

Dates to be arranged, please phone for details



OAKLANDS COLLEGE **School of Construction**

St Peters Road, St Albans ALI 3RX Tel: 01727 737213 Contact: Jeanne O'Reilly

Course Content: Situated in the town centre of St Albans, close to British Rail station, Oaklands routing course has been running successfully for 6 years and provides a one-day elementary course designed for the beginner and deals with router safety, its uses and cutters available. The project for the one-day course is to produce a bread board. The two-day course, targeted at the professional and the ambitious amateur, takes the art of routing a

stage further giving a broader look at the advantages of table routing, the benefits and precision of the dovetail jig and takes the student through the stages of making a drawer and raised panelled door. All students can expect a full day of lectures, videos and practical

router use. Lecturers: Ken Moorton & Bruce Marsh



COURSE DATES 1998

One Day Courses Dates to be

Two Day Courses Aug 31-Sept 1

Course Prices

One Day

£81

Two Day

£148



TEESSIDE COLLEGE

Douglas Street, Middlesbrough TS24 2JW Tel: 01642 300100 Contacts: Andy Batty/Julie Dodds

Course Content: The Longlands Campus is an exclusive building college who have added one-day and two-day routing courses to their comprehensive list of short courses. The one-day course includes basic routing principles, fitting and setting cutters, care and maintenance with emphasis on safety, techniques and cutter care. The one-day course is repeated on the two-day with the inclusion of table routing and jig/template making. Future courses will include a tradesmans course to incorporate the use of

proprietary jigs and fixtures, and a jig making course. Refreshments available. Lecturer: lan Coning

COURSE DATES 1998

One Day July 9 & 24

Two Day July 2-3, 16-17

Course Prices

One Day

£54.95

£109.95 Two Day



NEATH COLLEGE

Dwr-y-felin Road, Neath, Wales Tel: 01639 634271

Contacts: Dylan Wyn James, Wyn Pritchard

Course Content:

Continuing their long running success and as part of their endeavour to increase their short courses, the college are including a one-day routing course aimed to meet the demands of public interest. The course deals with router safety and discipline, increasing the confidence of the user with detailed instruction on the use of jigs

and templates. Other courses are also available. Lecturer: Dylan Wyn James

COURSE DATES 98

One Day Two Day Dates to be arranged

Course Prices

£65 One Day

£130 Two Day



Emphasis on safety and cutter care



YANDLES Martock, Somerset Tel: 01935 822207 of Martock

Contacts: Beverley Mansfield/Ann Pain

One Day

Course Content: Yandles woodworking centre is running two routing courses. The Basic Course is designed for those new to routing and takes students through general router uses and step by step working procedures introducing cutters and their uses as well

as cutter care. The Advanced

Course is for those wishing to benefit from purpose designed routing jigs and template work and experience the advantages of table routing. Turning course also available. Lunch is included in the course price. Lecturers: John Parslow

July 15, 18 & 22 August 12, 15 & 22

Course Prices

Basic

COURSE DATES 1998

Advanced

Honing a cutter using a DMT whetstone

One-to-one courses with Ian Coning are also available through Eaglescliffe Woodcrafts, Tel. 01642 786449 for details.

Prices correct at time of going to press, but are subject to change. Please contact individual colleges for current prices, dates of courses and further information.



Market Place 01322 660070

FOR SALE

- Link up Raglan tee slotted long slide, £502. Tel. 01543 360230 (W. Midlands).
- Lathe old cast iron treadle flywheel type 3' x 3' with accessories. Offers? Tel. Mr Woods on 01707 646863 (Potters Bar, Herts.).
- Norris smoothing plane No. 6 for sale. Offersplease, ring 01604 880533 (Northants.).
- DeWalt 1751 radial arm saw, 24" cut, on stand. Little used, £500. Tel. 01727 831082 (Herts.).
- **Elu 40001** dovetail jig, 12", with new cutter. Little used. Tel. 01727 831082 (Herts.).
- Woodworker Annuals 77-80 plus magazines and books. Tel. 01322 227354 (North Kent).
- PCC2000 chuck, basic chuck pin chuck, 2" spigot collet conversion kit. $\frac{1}{4}$ " / 1" collet $\frac{1}{4}$ " / $\frac{1}{2}$ " collet, $\frac{1}{4}$ " 3 way split ring. Cost £182, £75. Tel. 01253 737107 (Lancs.).
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- Yew logs, may be suitable for turning or carving. Offers? Tel. 01273 738338 (Hove, Sussex).
- Tauco bandsaw, floor standing, depth cut 6", spare blades. All offers considered. Tel. 01844 345335 (Bucks.).
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- Myford planer 4" bed, for ML8 or freestanding, £70. Tel. 01388 832342 (Co. Durham).
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- Draper wet/dry grinder, £50. Stanley No.6 plane, new, £30. Record 050, original box, blades, instructions, £50. All plus postage. Tel. 01142 816950 (Sheffield).
- Elu PS174 110 volt telescopic mitre saw, good condition, £200 o.n.o. Tel. 0181-482 3778 (Middx.).
- Coronet Major with lathe, saw, planer thicknesser, mortising attachment, accessories. Good condition, £285. Tel. 01684 567244 (Worcs.).
- Myford ML8 lathe, strong bench, Brooks motor, tool rests, faceplates, drives, Jacobs chuck. Excellent condition, £400. Tel. 01245 469873 (Chelmsford).
- Ebony log 10Kg approx 3' x 6" dia. Details on request, £60 o.n.o. inc. carriage. Tel. 01326 231456 (Cornwall).
- Tooling and accessories for Kity CK26, two sliding tables, French cutters, spindle blocks. Phone for details and prices, 01703 667942 (Southampton).
- Coronet Minorette, 6½" sanding disc, 6" circular saw, 4½" planer/ thicknesser. £195 o.n.o. Tel. 01252 524323 (Hampshire).
- Wood turning blanks and assorted hardwoods, large amount. Tel. 01793 693209 (Swindon).
- Router Elu MOF96E with eight used cutters, £79. 600mm Eumenia radial arm saw, £355. Tel. 01908 376966 (N. Bucks.).
- Festo E900 router with 800mm and 1400mm cutting guides, various cutters and router table, in excellent condition, £300. Tel. 01379 741086 (Norfolk).
- Motor single phase 1420rpm ¾Hp complete with reversing switch, suit lathe, £55, Tel. 01249 656622 (N. Wilts).
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- Trend router table, model CRT/A, complete with NVR switch, push stick. One year old, little used, £95. Tel. 01749 860243 (Somerset).
- Elu MHB157E belt sander with stand, belts etc, v.g.c. £100. Makita $^{1}\!\!\!/4$ sheet palm sander, v.g.c. £35. Tel. 01280 840510 (Northants.).
- Collector's item Hobbies "OK" treadle fretsaw machine in full working order with maker's 1928 instructions. £90. Tel. 01980 630327 (Wiltshire).
- Mortice machine for blue Coronet Major, complete with mortice cutters ¼, ½, ½, ½ plus slot mortice cutters ¾, ½, ½, ¼ £75. Tel. 01937 585393 (Yorks.).
- Coronet Major, £350. Multco M, 1" cap, £400. Tel. 01543 268737 (Staffs.).
- Woden woodworking vice, 10½" jaws, open 15" quick release, very strong, £60. Large cast iron mitre clamp, opens to 4". Tel. 01656 786324 (Mid-Glamorgan).
- Woodrat, good condition, £200. Tel. 01423 866430 daytime (N. Yorkshire).
- Workshop 15 x 12 made from 3x2 6x1 shiplap, apex roof, insulated, including benches, cupboards, 18 months old, £500. Tel. 0181-527 4632 (Chingford, Essex).
- Workshop clearance, private, Elu 8x5 £275. Planer thicknesser, DeWalt radial arm saw £275. Routers and other items. Tel. 0181-527 4632 (Chingford, Essex).
- Coronet No.3 wood turning lathe, 48" centres, set six chisels, two size tool rests, home made bench, £500. Bowl turning kit (Craft Supplies), precision chuck, videos and other accessories, £150. Tel. 01792 702594 (Swansea, Mid-Glamorgan).
- Stanley No.7 fore plane, £50. Stanley No.6 U.S.A. superb condition, £50. Moulding planes £3.50. Beech smoothing plane £3.50. Beech jack plane £6. Beech badger plane, closed handle, £10. Tel. 01492 871564 (Conwy).
- Combination woodworking machine Shopsmith Mark V with accessories & bandsaw. Buyer collects. £500. Tel. 01623 883357 (Newark, Notts).
- Leigh D3 dovetail jig, little used, with accessories and instruction manual £200. Tel. 01432 279100 (Hereford).
- Chiyozuru Sadahide plane named Rangiku for sale, red oak body, 8mm thick blade £500 o.n.o. Tel. 01837 83672 (Chulmleigh, Devon).
- Record 136 TBar sash cramps 2 x 42 inch £55. 135 type 4 x 30 inch £65. All new, unused. Tel. 01483 773180 (Surrey).
- Woodwork shop for sale. Myford lathe, var. speed bandsaw, planer, chisels,

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- Festo circular saw 200m & 1.4metre guide rail £195. Nobex Champion compound mitre saw £75. Twin bag dust extractor £95. All excellent condition. Tel. 01384 370092 (Stourbridge, W. Mids).
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- Leigh 24" dovetail jig and multiple mortise and tenon jig with video and instruction manuals £340. Tel. 01293 517395 (Crawley, Sussex).
- Norris A70 smoothing plane, excellent condition £500 o.n.o. Record 020C circular plane, mint condition, boxed £110 o.n.o. Tel. 01243 773607 (Chichester, W. Sussex).
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- Triton Mark III brand new in box, never opened, unwanted gift £195. Tel. 01444 459425 (Sussex).
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- ML8 lathe, metal stand, RT attach. face plates £300 o.n.o. Would px for small combination with cash adjustment. Tel. 01946 811569 (Cumbria).
- Kity KS combination woodworking machine, good condition £450. Tel.

01622 688809 (Maidstone, Kent).

- Large old wood lathe 7'6" centres, 21" face plate, ideal for four poster beds, needs motor, weight about 3/4 ton, length 12ft £500. Phone for more details 01328 700568 (Dereham, Norfolk).
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- Multico trade morticer, bench top, 240v, 3 chisels, cast sliding table, vgc £300. Scheppach 48 tooth TCT 12" blade, unused £25. Tel. 01925 210753 (Warrington, Cheshire),
- Electra Beckum HC260 planer thicknesser, v. good condition 240v, accessories, tools, manual, spare set blades £340. Tel. 0171 613 4256 (London).
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- Scheppach TKU12 tablesaw £380 to include wheels and panel cutting attachment. Kity 636 10" x 8" pl/thicknesser £480. Good condition. Tel. 01278 786200 (Somerset).
- Extension table roller set for any Scheppach 260mm planer. New, boxed and unused £30. Tel. 01497 845065 (Hereford).
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WANTED

- Wanted Hegner fretsaw variable speed, also hardwood offcuts. Will collect. Tel. 01427 810002 (Gainsborough).
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- Woodworking hand tools wanted by collector; single items or complete kits. Please tel. 01780 751768 or write to 10 Ayr Close, Stamford, Lincs. PE9 2TS.
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- Instructions for Stanley No. 50 multiplane or photocopy, costs reimbursed, Also any information on Spiers planes. Tel. 01202 723854 evenings (Bournemouth).
- Single phase mortice machine, Sedgwick or similar, 10" or 12", radial arm saw, single phase. Please telephone 01923 671344 (Herts.).
- Wanted Leigh dovetail jig and Leigh finger jointer. Tel. 01698 425847 (Hamilton).
- Wanted horizontal whetstone grinder with planer blade, jig. Samurai or Sharpenset models preference. Tel. 01937 842639 (W. Yorkshire).
- Wanted planer knife grinder, Wadkin or similar, also want carbide saw grinder, Autool, Volmer or similar. Pay

cash and collect. Tel. 01782 330705 (Stoke-on-Trent, Staffs).

- Release your assets, to buy that special tool. I collect Stanley items, you may have something I want. Tel. 01273 401144 (Barcombe, E. Sussex).
- Woodrat or Leigh D3/D4 jig. Will collect within 60/70 miles. Tel. 01482 223487 (Hull).
- Kity 609 saw/spindle moulder, must be excellent condition. Tel. 01977 602299 (Pontefract, W. Yorks).
- Leigh dovetail jig wanted, best price paid, also 12" disc sander. Tel. 01698 425847 (Hamilton).
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- Bandsaw Startrite 351. Must be in good condition. Phone 01732 842074 (Maidstone, Kent).
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Address for Sourcing	Craft Range Router Cutters	Professional Router Cutters	Routing Accessories & Jigs	Routing Publications & Videos	Diamond Sharpening Stones	Additional Information
ENGLAND						
General Fixings Ltd., Unit 54, Beeches Ind. Estate, Waverley Rd, Yate, Bristol, AVON BS17 5QR Tel: 01454 310015 Fax: 01454 273164						Probably the best selection of router bits and power tools in the West Country. Elu, Makita, AEG service agents.
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CBS (Power Tools) Ltd., V.P. Square, Storeys Bar Road, Fengate, Peterborough, CAMBRIDGESHIRE PE1 5YS Fel: 01733 343031 Fax: 01733 897151						Power tool specialists - good selection of Routers from leading manufacturers for professional and enthusiast. Phone for advice and best prices.
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Mid-Cornwall Sharpening Service, Trevalour Road, St. Dennis, St. Austell, CORNWALL PL26 8AH Tel: 01726 822289 Fax: 01726 824409						Stockists of Elu power tools, TCT saw blades, planer blades, band saws, HSS saws, complete sharpening service.
oe Greener's (Woodworking Centre), /alley St North, Darlington, CO. DURHAM DL1 1PZ. Tel: 01325 382038 ax: 01325 468539						Elu, DeWalt, Bosch dealers. We service and repair most makes of power tool. Hire machines available. Extensive range of spares & accessories. Demonstration days throughout the year.
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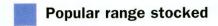
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Address for Sourcing	Craft Range Router Cutters	Professional Router Cutters	Routing Accessories & Jigs	Routing Publications & Videos	Diamond Sharpening Stones	Additional Information
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Lister Ind. Power Tools, 26 Bell Lane, Husbands Bosworth, Nr Lutterworth, LEICESTERSHIRE Tel/Fax: 01858 880333						Established for over 20 years.
S.J. Carter Tools Ltd., Gloucester House, 10 Camberwell New Rd., Kennington Park, LONDON SE5 0TA Tel: 0171 587 1222 Fax: 0171 587 0306						Woodworking equipment, power tools, hand tools, accessories and spare parts, repairs. BS EN ISO 9002 quality assured. Mail Order. All credit cards accepted
Jaycee Tools, 521c Yeading Lane, Northolt, MIDDLESEX UB5 6LN Tel: 0181 841 1099 Fax: 0181 842 4966						Mail order sales, repair service. Large stocks of power tools, hand tools and woodworking machinery. Central London 12 miles, A40 2 miles.
Stockport Power Tools, 411-413 Hempshaw Lane, Stockport, GREATER MANCHESTER SK1 4QA Tel/Fax: 0161 474 0000						Large stocks of power tools and accessories – fully equipped professionally staffed workshop for full after-sales service – local deliveries.
Frank Edwards (Norwich) Ltd., 29-31 Concorde Road, Vulcan Road South, Norwich. NORFOLK NR6 6BJ Tel: 01603 424011 Fax: 01603 787023						Established 1958 – specialist suppliers to professional and amateur woodworkers of tools, stains, polishes, hardware, doors, boards, mouldings and joinery products.
J&H Lacey (Long Eaton) Ltd., Manor House Road, Long Eaton, Nottingham. NOTTS. NG10 1LR Tel: 0115 973 5155 Fax: 0115 946 1247						Hand & power tool specialists. Architectura & general ironmongery. Adhesives & fixing for the building & construction ind., shopfitters & furniture manaufacturers.
Hopkinsons Power Centre, 21 Station St., Nottingham, NOTTS. NG2 3AL Tel. 0115 988 1855 Fax: 0115 958 8326						Professional friendly service for Elu, DeWalt, Trend, Freud, Bosch. Large stocks of cutters. Clearance of over 600 various Bosch cutters at only £5.99 each
Toolmaster (Oxford) Ltd., 148 Oxford Road, Cowley, OXFORD 0X4 2EA Tel: 01865 712152 Fax: 01865 747380						Stockists of all major brands of portable and stationary woodworking equipment and accessories.
Elmers Hardware, 59-61 Edmonton Road, Kesgrave, Ipswich SUFFOLK IP5 7EQ Tel: 01473 623381 Fax: 01473 625997						Stockists of Elu, B&D, DeWalt, Bosch, Draper, Clark, Skil, Ryobi, AEG. Power tools and full range of hand tools.
RM Myers & Co., 53 Sea Road, Fulwell, SUNDERLAND SR6 9BW Tel: 0191 548 0003 Fax: 0191 516 0838						Full range of power tools and all hand tools stocked in depth.
Fixing & Power Tool Centre, Brighton Road, Salfords, Redhill, SURREY RH1 5EQ Tel: 01293 820088 Fax: 01293 820099						Offering services and repairs. Expert advice, wide range of fixings and power tools, 24 hr nationwide delivery, customer A/cs, all credit cards accepted
L H Turtle Ltd., 6-12 Park Street, Croydon, SURREY CRO 1/YE Tel: 0181 688 5513						Hand and power tool specialists. Handicraft and ironmongery depts., backed by personal and friendly service. Free delivery to 50 miles.
Shaws Electricial Ltd., 353 Purley Way, Waddon, Croydon, SURREY CRO 4NM Tel: 0181 688 0491 Fax: 0181 688 0492						We carry the largest range of professional router cutters in South East England with a service second to none.
Tyhurst Limited, 13 Farmfield Road, Uckfield, SUSSEX EAST TN22 5AG Tel: 01825 764228 Fax: 01825 767266						Stockist of a wide range of machines for builders, joiners and DIY. Also full range of building supplies.

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Address for Sourcing	Craft Range Router Cutters	Professional Router Cutters	Routing Accessories & Jigs	Routing Publications & Videos	Diamond Sharpening Stones	Additional Information
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Routech 59 Langstone Road, Dudley, WEST MIDS. DY1 2NL Tel: 01384 827893 Mobile: 0956 629940						We stock KWO and Trend Tooling jigs and accessories. Freud, DeWalt, Bosch and Makita available to order. Please telephone before visiting. Tel/Fax: 01384 827 893.
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Wiltshire Power Tools, 6 Semington Turnpike, Semington, Nr. Trowbridge, WILTSHIRE BA14 6LB TEL: 01380 870831						Appointed sales and service agent Makita, Elu, B&D, Bosch. Area covered - Malmesbury Calne, Marlborough, Warminster, Frome, Trowbridge, Devizes. 6 days, 8 til 5.30.
Yorkshire Woodcraft Supplies., 174 Finkle Street, Cottingham, Nr Beverley, YORKSHIRE EAST HU16 4A3 Tel: 01482 844200/840103 Fax: 01482 844200						Extensive display of home user and industrial woodworking machinery, tooling and accessories. A friendly place offering competitive prices, well worth visiting.
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Les K. Power Tools, Unit 15, The Idas, Pontefract Road, Stourton, Leeds, YORKSHIRE WEST LS10 1SP Tel: 01132 714808 Fax: 01132 706328						For a personal friendly service on all power tools and fixings.
SCOTLAND						
James Sime & Co. Ltd., 26-40 Cow Wind, Falkirk, CENTRAL REGION FK1 1PT Fel: 01324 22592/3 Fax: 01324 612522						Routing demonstrations, sharpening service. Hand tool specialists. Stockist of Trend, Elu, DeWalt, Black & Decker, Bosch & Draper.
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Swan Hire Limited, Merlins Hill, Haverfordwest, PEMBROKESHIRE SA61 1PE Tel: 01437 765251 Fax: 01437 763886						A good range of Elu routers and other Elu equipment available for hire. Jigs are now also available for hire.
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W McMaster Ltd, 24-26 Church Lane, Belfast, CO. ANTRIM BT1 4QN Tel: 01232 321542 Fax: 01232 330319						Stockist of Trend, Elu, Bosch, Hitachi power tools, D.I.Y. and professional. Hand tools, both woodworking and engineering.
S.I.A. Agencies Ltd., 157-173 Roden Street, Belfast, CO. ANTRIM BT12 5QA Tel: 01232 246461 Fax: 01232 240745						Stocking power tools, machinery & consumables relating to your trade. Demonstrations available on most equipment. Next day delivery.

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