Issue 27 June 2017

Woodworking CRAFTS

HAND, POWER & GREEN WOODWORKING • TURNING • RESTORATION • DIY

Make beautiful dovetail joints

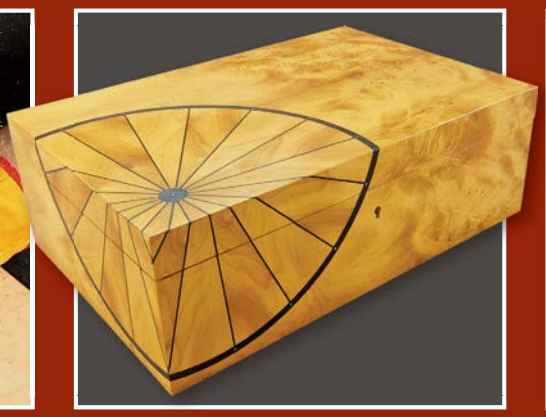
ON TEST:
- General Finishes chalk paints & wood stains
- Triton jigsaw
- Colt drill bits

TECHNIQUES:
- Kitchen upgrade
- Wattle hurdle making
- Fitting out a workshop
- Using disc & belt sanders
- Green wood mortise & tenons

Scrollsawn butterflies & dragonflies

POWER CARVING

ANNIVERSARY BOX



ROUTER HINGE JIG

Panel Saws

K4 perform

K3 winner comfort

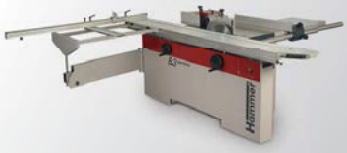
Planer-thicknessers/Planers/Thickn

A3 41

A3 31

A3 41 A

Saw Spindle Moulder



B3 perform

B3 winner

Combination machines

C3 31 perform

C3 31

Bandsaw

Hammer®

The obvious choice!

IF IN DOUBT ...

... USE A HAMMER

HAMMER - A range of over 20 machines for the keen and professional woodworker.

FELDER-GROUP UK

Unit 2, Sovereign Business Park, Joplin Court
Crownhill, MK8 0JP MILTON KEYNES
Tel. 01908 635 000 info@ukfelder.co.uk

www.ukhammer.co.uk

✆ Request your free catalogue now!

essers

Spindle Moulder

A3 41 D

F3

Horizontal Mortiser

N 3800
N 4400

D3

Mobile Dust Extractor

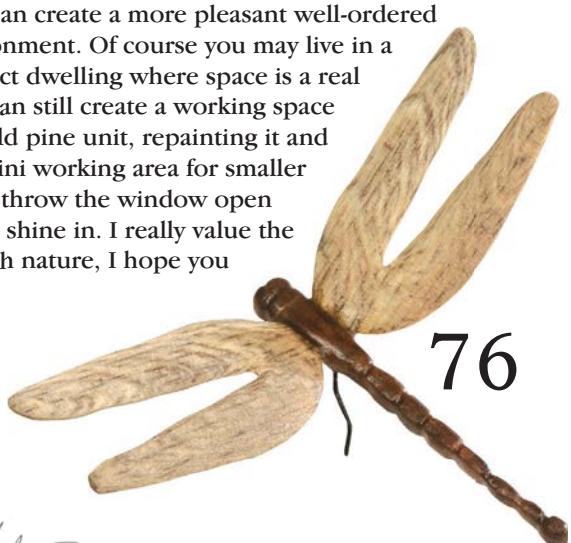
S01

HAMMER,
Quality and precision from **Austria**

Welcome

to the June issue of *Woodworking Crafts*

Hello Everyone and welcome. Although we know our weather can be quite unpredictable, if it is set fair there is nothing I like better than working outside rather than in the workshop. Coincidentally we have an article about fitting out a workshop but again, summertime is the best time for this because you can at least pile your workshop or shed contents in a sprawling heap on the lawn or backyard. It's a good idea of course to buy a cheap, big tarpaulin just in case the weather breaks, but I love having a big turn out and sort out. At the beginning it seems like there is something of a mountain to climb, but after a while, as you go through everything and make some tough decisions about what to keep and what to junk, things start to become clearer. This process of doing your workshop 'life laundry' is instructive and satisfying and by gradually finding the right places inside for storing and accessing tools and materials you can create a more pleasant well-ordered working environment. Of course you may live in a flat or a compact dwelling where space is a real issue but you can still create a working space by buying an old pine unit, repainting it and fitting it as a mini working area for smaller craft work and throw the window open and let the sun shine in. I really value the connection with nature, I hope you do too...



Anthony Bailey, Editor
Email: anthonyb@thegmcgroup.com

In the June issue...

PROJECTS

12 Diamond Wedding box

42 Plans for you – pagoda

72 Raised garden bed

76 Scrollsawn butterflies and dragonflies

TECHNIQUES

5 Accessible Kitchen upgrade

24 Introduction to rotary power carving

31 Chairmaking – mortise and tenon joints

36 Router hinge jigs

40 #@*&!%?! happens

48 Work smarter – use the right tool

58 What you need to know about disc and belt sanders

61 Spirit level restoration

63 Fitting out a workshop

68 Through and half-blind dovetails

82 Top 10 tips – clamping

COMMUNITY

18 News and events

20 Tree for life – box

41 This month's contributors

44 Up on the roof – thatching

51 Reader group test – Colt drill bit

52 Woodland ways – wattle hurdle making

66 Ask the experts

80 Next issue

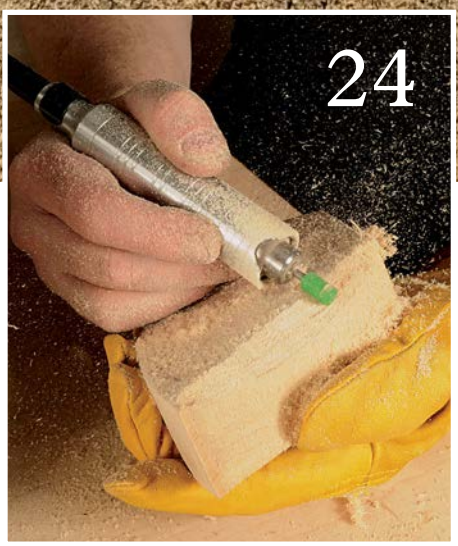
88 Focus on Marcel Breuer

KIT & TOOLS

38 Kitted out

55 Test – General Finishes

75 Test – Triton jigsaw



Woodwork on the web

To find more great projects, tests and techniques like these, visit our fantastic website at: www.woodworkersinstitute.com

CLEAN FINISHING

triton
Precision Power Tools

280W RANDOM ORBIT SANDER

A random orbit sander is only as good as the finish it can achieve. Triton's **TROS125** is a powerful yet compact sander with a 125mm hook-and-loop backing pad.

Featuring a multiple-holed dust extraction backing pad and supply of high-quality mesh sanding sheets, the **TROS125** redirects even the finest dust away from the work surface, leaving the face of the tool cleaner for longer, which allows more time to produce a quality finish.

Equipped with a 360° rotating dust port, the random orbit sander can be connected to a workshop vacuum positioned wherever it is needed around the work surface, which optimises workspace, and prevents tangles or upsets to the balance of the tool.

Engineered Precision

tritontools.com

Access all areas

In an abridged extract, **Debra Judge Silber** describes how an American family's need for a wheelchair-friendly kitchen did not mean skimping on good design

In Bill and Allison Pileggi's kitchen, it's one cool idea after another: drawers snuck into toe kicks, cabinet doors that slip out of sight, appliances that pop open on command. Then there are the attractive features: orderly white cabinetry that offers glimpses of colourful dishware through glass, marble and granite countertops that weave together in a rectilinear backsplash behind the cooktop.

It's a kitchen with broad appeal, even though it was painstakingly designed to meet the family's needs. This kitchen sends a strong message: universal design is more individual than you might think.

Paralysed from the waist down since college, Allison uses a wheelchair. While that fact certainly affects her requirements in a kitchen, it doesn't mean that her needs are the same as those of every

THE PERFECT MIX: a mixer lift promised to be a big help in the kitchen, but mounting the hardware on the cabinet sides would require a space-hogging swinging door. The answer: a false wall inside the cabinet that also allowed for a retractable door

THE LOWDOWN ON TWO DESIGN HIGHLIGHTS: toe-kick drawers that open with a tap provide a home for kitchenware that all members of the family can reach. Backed away from the sink to minimise splash-spotting, the new window sits nearly flush with the 34½in high countertop, providing a view for all

other homeowner with mobility issues. 'I'm very functional; I bend down to pick up stuff all the time,' Allison says when asked about the toe-kick drawers where she stashes everything from towels to plasticware. 'For someone else, that might not be an option. That's why universal design needs are so specific.'

Allison and Bill wanted a kitchen matched to their needs and tastes, not to generic ADA standards. The problem was that none of the kitchen designers they consulted grasped this.

A universal playbook with someone else's moves

The Pileggis bought their suburban Pittsburgh ranch home because it offered both single-floor accessibility and the potential for improvement, especially in its galley kitchen. It would be eight years, however, before they got around to the kitchen remodel they planned from the start.

In the year leading up to the project, the Pileggis gathered photos of kitchens they liked, investigated appliance options, and churned out design sketches. In these notes and drawings, they discovered a kitchen that would do more than accommodate Allison's reach; it also would provide a comfortable environment for her husband, daughter, and others.

'My mom comes on weekends, and I knew she was going to be working in this kitchen,' Allison explains, 'so I didn't want it specific to my needs.' Aesthetics also was important. Allison and Bill wanted an attractive, family-friendly kitchen – not, as Bill says, 'an occupational-therapy lab.'

Their homework complete, the Pileggis consulted local kitchen designers. The plans that they came back with, though, were a disappointment. 'We knew what we needed, but we thought a kitchen designer would fill in all the gaps,' Bill says. 'Each came back without a clue to what we were asking for. Either their CAD design had no aesthetic quality and looked institutional, or it simply ignored the fact that the person using this kitchen had to do it from a wheelchair.'

Allison and Bill decided to take the kitchen design into

their own hands, although they still needed professionals to translate their specifications into framing and cabinetry. Those needs were met by New Hampshire-based Crown Point Cabinetry, whose designer, Mike Murphy, spent four months drawing and redrawing plans, and by Nick Cratsa, a local contractor willing to add to the family's vision. The result is a universally comfortable kitchen that blends accessible design with rich materials and fun, family-friendly features. 'There's something in this kitchen for everybody,' Bill says.

Issues and invention

The renovation encompassed the original 10ft by 22ft galley kitchen and adjacent spaces, which included a tight powder room, an entry from the back patio, and a laundry/mechanical room at the end of a narrow hallway. The space totalled 440 sq ft, with a wall dividing the kitchen from the other areas.

After moving the furnace to the attic, the Pileggis looked at moving a wall to widen the kitchen so that it could accommodate an accessible island with at least 3ft on all sides. The good news was that the wall, which other contractors had described as load bearing, bore only the ceiling.

'Nick sat at the kitchen table with his laptop, and said, "You have nothing above you. Have you thought about raising the ceiling?"' Bill recalls. Allison still wanted the cabinets to connect with a flat ceiling, so they devised a

BLENDING IN: Clearances needed for the Fisher & Paykel® refrigerator drawer dictated the 35½-in. height of the counter on that side of the kitchen. The adjacent laundry-room pantry is accessed through retractable doors that slide forward to close, creating the appearance of an unbroken line of cabinetry

hybrid tray and vaulted ceiling, with a skylight where the 5ft-tall attic space had been.

With the old laundry-room hallway absorbed by the new powder room, laundry-room access was moved to the kitchen. Allison and Bill didn't want to interrupt the line of cabinetry on that side with a doorway, but they also knew that any door flush with the cabinets would have to swing out, creating an impassable location. The answer lay in hardware from the cabinetmaker that enabled a pair of tall cabinet-style doors to swing open and then slide backward. With the doors retracted, the 28-in. pass-through is just wide enough for Allison's wheelchair. 'It's amazing how an inch here and an inch there makes a difference,' Bill says.

'If you can draw it, we can make it'

With space concerns addressed, it was clear the dark, outdated cabinets and appliances had to go. 'I was very interested in having an off-white kitchen with inset cabinet doors,' Allison says. The desire for this style led her to Crown Point, but more than the cabinets sold her. 'They were the ones who said, "If you can draw it, we can make it,"' she says.

That began a four-month exchange of more than 220 emails loaded with dimensions, product suggestions, and scans of pencil sketches and handwritten notes. Mike translated all of this into a design scheme in Cabinet Vision®, the software his company uses. 'Mike was like the engineer,' says Bill. 'It was so collaborative, it was beautiful.'

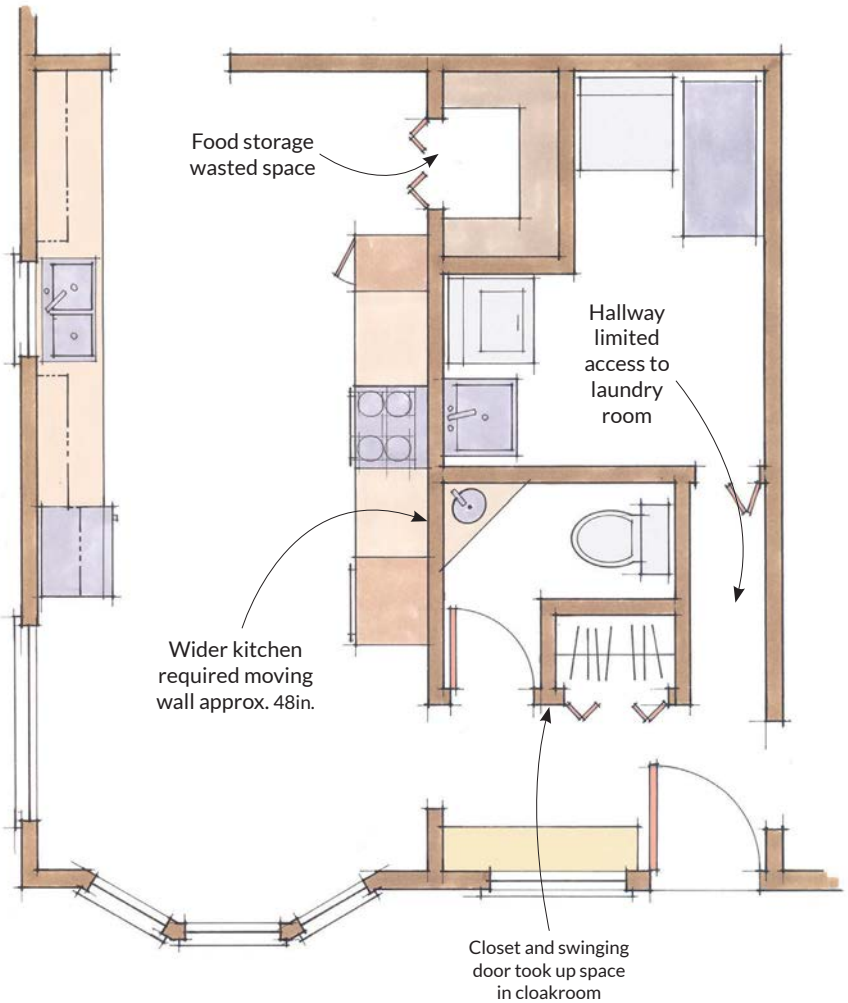
What did Mike get that other designers didn't? His answer seems too simple. 'It comes down to just listening closely to what it is they're trying to achieve, and putting myself in their place,' he says.

For Allison, one of those things was a cabinet finish that not only would brighten the kitchen but also would hold up to occasional dings from a wheelchair. Mike sent samples of each finish for Allison to test. She opted for a painted finish that could be touched up easily. Other features important to the couple included lots of drawers, which are easier to access for everyone, and countertop heights ranging from 30in on the island to 35½in at the cooktop. A new window behind the sink is about 5in lower than the original, enabling Allison – and 7-year-old daughter Lila – to look into the yard and the retired apple orchard beyond.

The stainless-steel farmhouse sink protrudes from the cabinet base by about 1½ in, offering a wide ledge that Allison can grip when reaching for the tap. A pot filler over the stove enables her to fill pasta pots at the point of use. A mixer lift in the island was designed to accommodate retractable doors, and storage drawers fill most of the kitchen's 7in toe-kick space. This recess, 2in shorter than toe kicks typically recommended for accessible kitchens, is high enough to accommodate the footrests on Allison's wheelchair without throwing off the aesthetic balance of the cabinetry. ➤

BEFORE

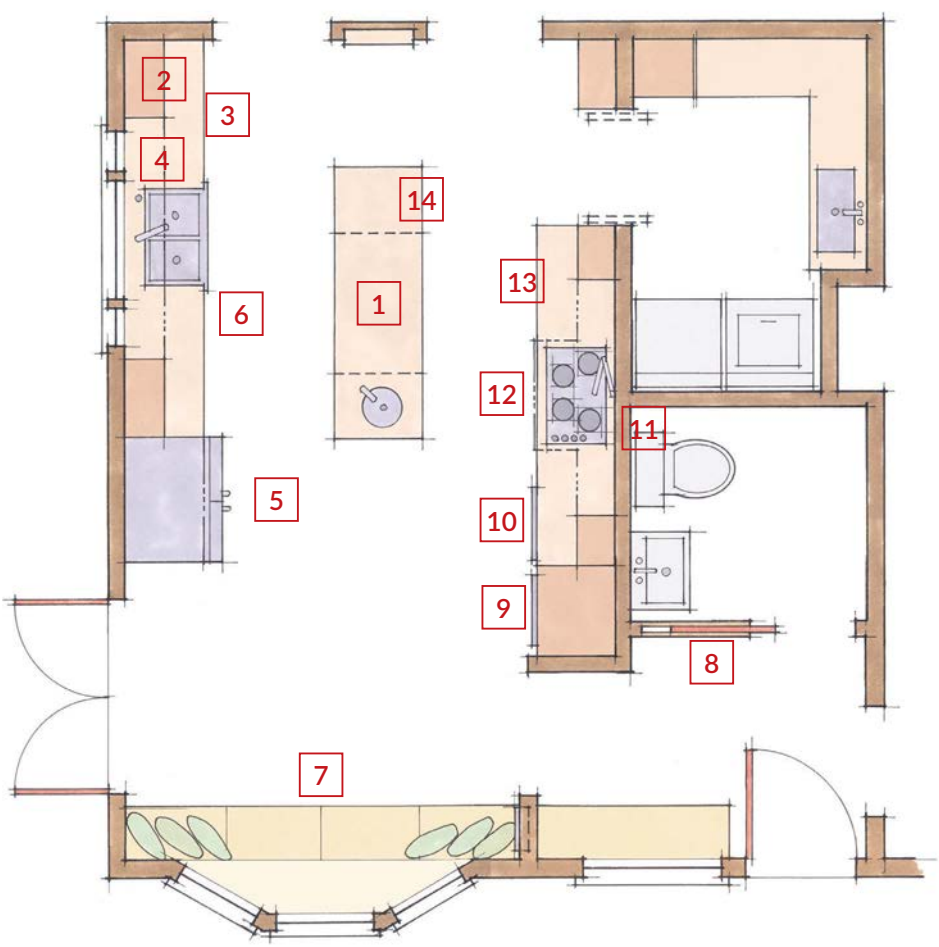
The original galley kitchen wasn't wide enough to accommodate an island, and the adjacent laundry/mechanical room could be accessed only by a narrow hallway. Access to the small powder room also was not ideal.



AFTER

Moving the kitchen wall, which supported the original flat ceiling, not only provided the family with room for an island, but also allowed them to open the space above with a vaulted tray ceiling and a skylight. Laundry-room access was made through the kitchen, and the dysfunctional hallway was incorporated into a larger cloakroom. Outfitted with new cabinetry, electrical, and plumbing, the kitchen was ready to accommodate a wealth of accessible and functional features.

1. Accessible island measures 84in long by 27in wide by 30in high
2. Deeper wall cabinets shorten reach to shelves; appliance garages extend storage to countertop
3. Dishwasher drawer
4. Window counter height of 34½in enables views outside
5. 45in of space on each side of island
6. Toe kicks 7in high accommodate Allison's wheelchair but maintain typical kitchen proportions
7. Pneumatic hinges and small sections make bench storage accessible
8. Pocket door
9. Easy-to-use ball-bearing oven racks
10. Microwave drawer opens with a touch button
11. Reachable pot filler
12. 35½-in cooktop height
13. Refrigerator drawer keeps essentials within reach of everyone
14. Mixer lift with retractable doors



OVEN OPTIONS: While a side-opening oven might be considered more accessible, the Pileggis liked the features of this Thermador, including the ball-bearing slides that help racks to move in and out easily

'ADA standards are terrific, but you can manipulate them,' says Mike, who has designed a number of universal kitchens, including one for a former football player. 'Not every person is the same size; not every wheelchair is the same width.'

In fact, the Pileggis have discovered that the kitchen's proportions are ideal for all its frequent cooks. 'My mom is only about five-one, so the lower countertop works for her,' Allison says. 'Anyone who has worked in this kitchen has felt that it really works well." That includes her brother, who is 6ft tall.

Appliance approach

'We really scrutinised the appliances,' says Bill, who made outfitting the kitchen his personal mission. Prize finds included a Thermador wall oven and steam oven. The controls are placed between them within easy reach, and the ball-bearing slides on the lower ovens' racks ease access. The panelled refrigerator has a freezer on the bottom, but refrigerator items Allison can't reach are stocked in a refrigerated drawer. The microwave, mounted in the base cabinet to the right of the cooktop, and the dishwasher both are drawer models. The cooktop is induction. Its cool-to-the-touch surface was not a necessity, Allison says, but she admits, 'I do lean over it. And having a young daughter – it's safer for her, too.'

What made it work

Bill and Allison say that it was their contractor's and cabinetmaker's open-mindedness and willingness to collaborate that got them the kitchen they wanted. Nick and Mike say that it was also the enormous time and effort the Pileggis put into analysing and then clearly communicating their needs.

'What was great about working with Bill and Allison is they knew exactly what they wanted,' says Nick.

Mike agrees: 'They had their ducks in a row,' he said. 'They prepared for quite some time, and it shows.' ■

CALCULATED MOVE: Before cabinets were installed, contractor Nick Cratsa drew a line on the wall to mark the countertop height, then asked Allison to test her reach before he positioned the pot filler

READ Woodworking CRAFTS ANYWHERE

DOWNLOAD THE APP NOW

Veneering a wheel on a Diamond Wedding box

For her cycling-mad godparents' anniversary, **Louise Biggs** decided only one type of decoration would be suitable – a bicycle wheel

Tool List

For forming the veneer wheel

- Protractor
- Compass
- Straight edge
- Veneer knife
- Utility knife
- Veneer tape
- Self-healing cutting mat

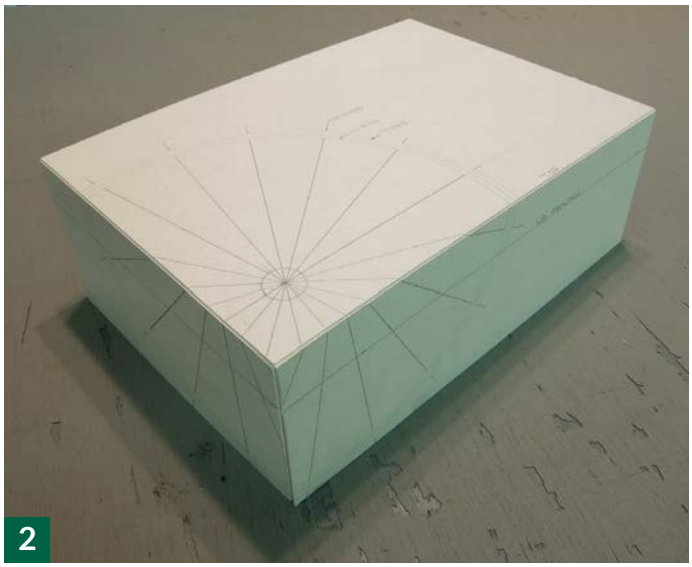
Tools required for making the box are the same as those listed in my projects in issues 08 and 16.

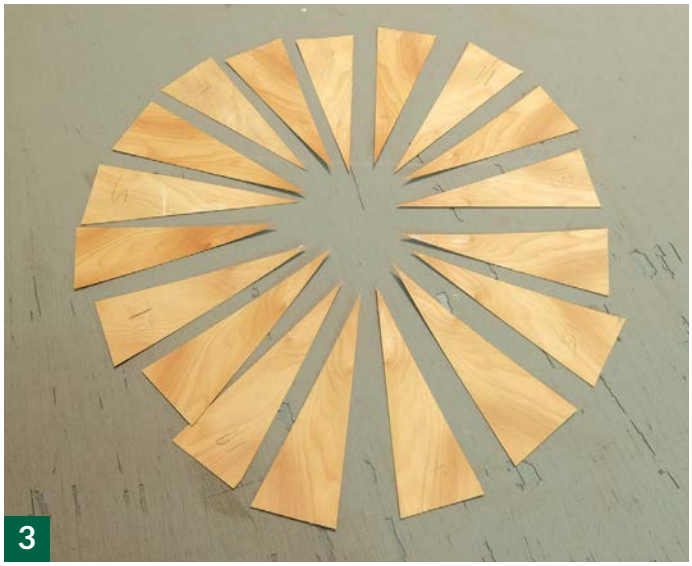
As the making of the box has been shown previously I will concentrate on how I formed the wheel and applied it to he box with tiny Cubic Zirconia for a little sparkle.

1 Having formed the basic stylised idea it changed slightly with the final design showing a buckle in the rim and broken spokes, something that both my godparents have experienced routinely.

The box was veneered with yew (*taxus baccata*), fumed pommele eucalyptus (*eucalyptus* spp.) for the rim/tyre and preformed black lines for the spokes, over birch faced ply.

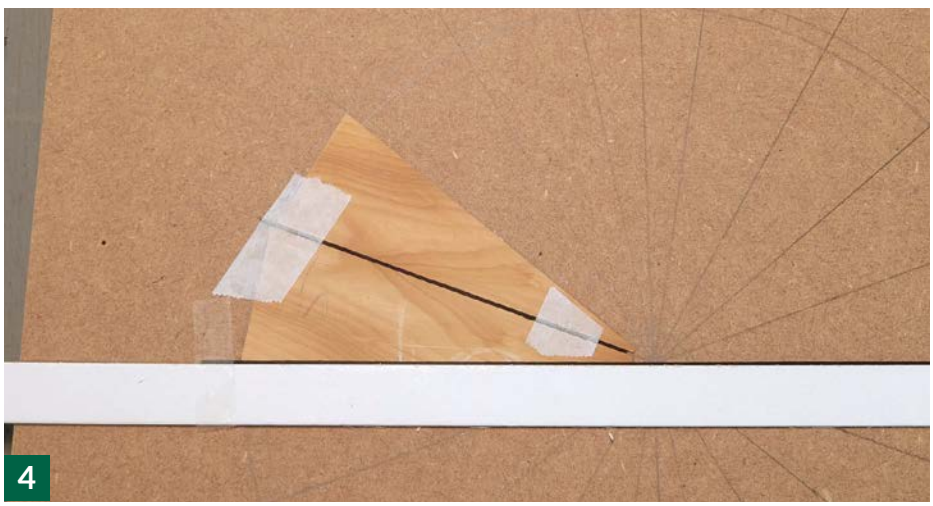
1


2


3

Stages

2 To work out the size and position of the wheel a card template was made of the box which allowed the design to be drawn flat using a protractor, rule and compass and then folded into the box shape. As I wanted the hub of the wheel to be in the corner of the top the radius of the wheel was measured to finish just off the bottom edge of the box.


4

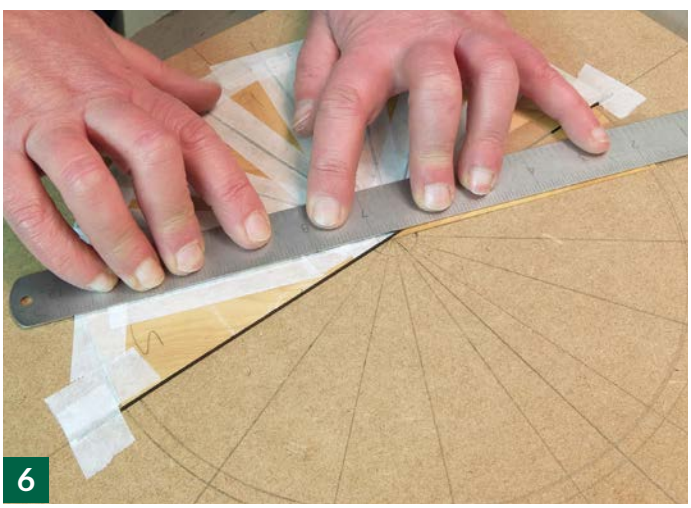
3 Having made a hardboard template of the required triangle, 18 consecutive pieces of yew veneer were cut and numbered using a utility knife and a rule so the grain could be 'book-matched' around the circle and 18 pieces of black line cut to length. I cut the veneers on a self-healing cutting mat as it preserves the life of the knife blades and helps in preventing breakout on the veneers.

4 The design was marked out on a piece of waste board and a black line positioned on the centre line of the circle, kept straight with a piece of thick card adhered to the board. The first triangle was positioned with the next black line centred over the pencil line followed by the second triangle which was turned over to match the grain.

5 The process was repeated turning the triangle veneers each time and positioning the black lines until half the wheel was completed, taping each section of the design together and to the board with veneer tape.

6 To build the second half of the wheel, with the aid of a steel rule/straight edge, each triangle and black line was checked to make sure it aligned with its opposite number. At this stage small adjustments could be made to the triangles to make sure everything aligned. ➤


5


6

7 With all the veneers and black lines positioned a stylised wheel was formed ready to be trimmed to size before adding the rim/tyre and hub.

Circle cutting jigs

8 I made these jigs with fixing points for both of my routers based on a design I saw in the book *Router Jigs and Techniques* by Patrick Spielman. They are made from 6mm perspex and the jig is held over a tight fitting nail through one of a series of holes which forms the pivot point. The hole position and cutter size can be adjusted as required to obtain the correct diameter.

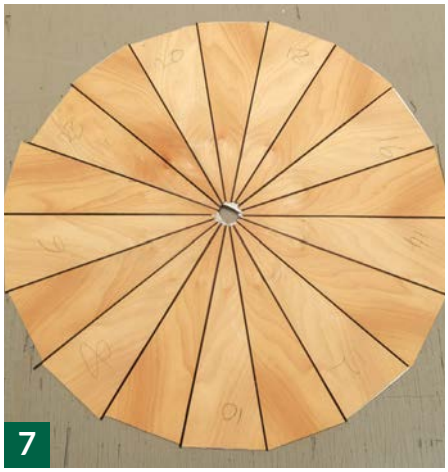
9 In order to trim the outer edge to a circle the veneer wheel was glued to a piece of waste board using wallpaper paste with newspaper in between to aid removal. I fitted the smallest circle cutting jig to the router and having selected the right size cutter to trim to the right diameter the router was carefully turned to cut round the veneer wheel before releasing the veneer from the board.

10 Four pieces of pommele eucalyptus were cut to fit around the outside of the veneer wheel. These were carefully cut in by hand using a utility knife before cutting an end joint through the two layers of veneer for a tight joint for each quarter. Each piece was then taped in place.

11 The veneer wheel was again glued to a waste board as in Stage 9 in order to cut the circle to form the rim/tyre. Before releasing the veneer from the board a small Forstner bit, whose size corresponded to one of my plug cutters, was used to trim out the centre hub. The plug cutter then cut the veneer plug. When released from the board and cleaned up the underside of the veneer wheel was revealed.

12 Next, the wheel was marked into the sections required for the top, side and front, marking the cut line for the lid at the same time. One section of the wheel was not used to allow the side and front to meet. Having double-checked the markings, the wheel was cut using a straight edge and a veneer knife.

13 With the veneer sections cut they were placed on the box to check


7


8

9


10


11


12


13

everything was correct. The veneer wheel had taken on the look of a buckled wheel, a nod to the problems faced by cyclists from time to time. There were slight discrepancies in the spokes on the side but this added to the effect by looking like broken spokes which usually accompany buckled wheels.

14 Before the veneer wheel sections could be glued to the box they each had to be cut into the yew veneer. Having previously cut to size the yew sections and marked them so that the grain patterns lined up, each section of the wheel was cut into its corresponding piece of yew by carefully cutting with a veneer knife around the shapes.

15 The sections were then taped together with veneer tape making sure that everything aligned between the lid and box sections.

16 With the back, side and front veneers glued in place two pieces of 'book-matched' yew were taped together for a tight joint and the top section of wheel cut in to fit.

17 Before putting the lid in the press I made sure that the veneers between the black lines were pushed down to expel any trapped air and make sure the veneers were tight to the black lines and level on the back.

18 After cleaning up but before polishing very small holes were drilled in the rim at the end of each spoke and one in the middle of the hub and using tweezers a tiny Cubic Zirconia glued in with a tiny amount of Superglue. A clear glue needs to be used and only a tiny amount otherwise the stones will not sparkle as well, but be careful not to glue your fingers! ■


14


15


16


17


18

Machine Mart

NOW 66 SUPERSTORES NATIONWIDE

WHERE QUALITY COSTS LESS

Clarke TABLE SAWS

FROM ONLY £72.99 EXC.VAT £87.59 INC.VAT

LEG STAND KITS FOR CTS10D AND CTS11 ONLY £27.59 INC VAT

INCLUDES LEFT & RIGHT TABLE EXTENSION

CTS10D

MODEL	MOTOR	BLADE	EXC.VAT	INC.VAT
CTS800B	600W	200mm	£72.99	£87.59
CTS11	1500W	254mm	£149.98	£179.98
CTS10D	1500W	254mm	£169.98	£203.98

Clarke 4" BELT/ 6" DISC SANDER

- Dust extraction facility
- 4" x 36" belt tilts & locks 0-90°
- 225mm x 160mm table, tilts 0-90°
- 370W, 230V motor

CS4-6D

£96.99 EX.VAT £116.39 INC.VAT

Clarke 6" BELT/ 9" DISC SANDER

- Includes stand
- 1 HP/ 230V/ 1ph motor

CS6-9C

£239.00 EXC.VAT £286.80 INC.VAT

Clarke TABLE SAW WITH EXTENSION TABLES (250mm)

CTS14

- Ideal for cross cutting, ripping, angle and mitre cutting
- Easy release/locking mechanism for table extensions
- 0-45° tilting blade
- Cutting depth: 72mm at 90° / 65mm at 45°

£129.98 EXC.VAT £155.98 INC.VAT

SHOWN WITH OPTIONAL LEG KIT CLK5 £19.98 EXC.VAT £23.98 INC.VAT

EVOLUTION FURY5-S TABLE SAW

NEW

- 1500W motor
- 0-60° mitre gauge
- Cutting depth: Steel 3mm, Wood 85mm at 90° or 58mm at 45°

£149.98 EX.VAT £179.98 INC.VAT

3 YEAR GUARANTEE

Clarke WOODWORKING VICES

STANLEY Record

FROM ONLY £13.99 EX.VAT £16.79 INC.VAT

WV7

MODEL	MOUNTING	JAW (WIDTH/OPENING /DEPTH)mm	EXC.VAT	INC.VAT
Clarke CHT152	Bolted	150/152/61	£13.99	£16.79
Stanley Multi Angle	Clamped	72/60/40	£17.99	£21.59
Record TV75B	Clamped	75/50/32	£20.99	£25.19
Clarke WV7	Bolted	180/205/78	£27.99	£33.59

Clarke QUALITY CAST IRON STOVES

NEW

8kW

OVER 23 QUALITY STYLES ON DISPLAY

£219.00 EXC.VAT £262.80 INC.VAT

FLUES, COWLS & ACCESSORIES IN STOCK

BARREL II

Clarke 1" BELT/ 5" DISC SANDER

- Includes 2 tables that tilt & lock

£69.98 EX.VAT £83.98 INC.VAT

- Quality Induction 300W motor

CBS1-5

Clarke DUST EXTRACTOR/ CHIP COLLECTORS

FROM ONLY £139.98 EX.VAT £167.98 INC.VAT

METABO ALSO AVAILABLE

- Powerful 750W motor
- 56 litre bag capacity
- Flow rate of 850M3/h

MODEL	MOTOR	FLOW RATE	BAG CAP.	EXC.VAT	INC.VAT
CDE35B	750W	450 M3/h	56Ltrs	£139.98	£167.98
CDE7B	750W	850 M3/h	114Ltrs	£159.98	£191.98

Clarke CWVE1 DUST EXTRACTOR

- Portable vacuum extractor for keeping work areas clean & free from dust particles, shavings, etc
- Quick release lid
- Air flow 183m³/hr
- 1100W input power
- Inc. filter cartridge, 4x inlet hose reducer adaptors & 4 dust bags

50 LITRE CAPACITY

NEW

£109.98 EX.VAT £131.98 INC.VAT

Clarke STAPLE/ NAIL GUNS

- All models include nail/staple pack and tough moulded case

FROM ONLY £22.99 EX.VAT £27.59 INC.VAT

CONSN18LiB

SPARE NAILS / STAPLES IN STOCK

ELECTRIC AND CORDLESS MODELS IN STOCK

MODEL	TYPE	STAPLE/NAIL GAUGE	EXC. VAT	INC. VAT
CESNG1	Electric	22/18	£22.99	£27.59
CCT48	Cordless 4.8V Ni-MH	22/18	£29.98	£35.98
CESNG2	Electric	18/18	£39.98	£47.98
CONSN18LiB	Cordless 18V Lithium-Ion	18/18	£119.98	£143.98

Clarke MULTI FUNCTION TOOL WITH ACCESSORY KIT

- Great for sawing, cutting, sanding, polishing, chiselling & much more
- 250W motor
- Variable speed

£39.98 EXC.VAT £47.98 INC.VAT

CMFT250

Clarke 4" BELT/ 8" DISC SANDER

- Includes two tables
- 550W 230V motor

£159.98 EX.VAT £191.98 INC.VAT

CS4-8

Clarke TURBO AIR COMPRESSORS

tiger airmaster

FROM ONLY £89.98 EX.VAT £107.98 INC.VAT

- Superb range ideal for DIY, hobby & semi-professional use
- 'V' Twin Pump

8/250

MODEL	MOTOR	CFM	TANK	EXC.VAT	INC.VAT
8/250	2HP	7.5	24ltr	£89.98	£107.98
7/250	2 HP	7	24ltr	£94.99	£113.99
11/250	2.5HP	9.5	24ltr	£109.98	£131.98
8/510	2HP	7.5	50ltr	£119.98	£143.98
11/510	2.5HP	9.5	50ltr	£139.98	£167.98
16/510*	3 HP	14.5	50ltr	£209.00	£250.80
16/1010*	3 HP	14.5	100ltr	£259.98	£311.98

Clarke DISC SANDER (305MM)

- Powerful, bench mounted
- 900W
- Dust extraction port

£129.98 EX.VAT £155.98 INC.VAT

CDS300B

Clarke POWER PLANERS

CEP1

BLACK & DECKER

- 82mm cutting width

FROM ONLY £28.99 EX.VAT £34.79 INC.VAT

MODEL	MOTOR	DEPTH OF CUT	EXC.VAT	INC.VAT
Clarke CEP1	650W	2mm	£28.99	£34.79
Einhell TE-PL850	850W	3mm	£52.99	£63.59
B&D KW750K - GB	750W#	2mm	£57.99	£69.99

Clarke CPF13 ELECTRIC POWER FILE

- Variable belt speed
- Tilting head

*Black & Decker

FROM ONLY £49.98 EX.VAT £59.98 INC.VAT

MODEL	MOTOR	BELT SIZE (mm)	EXC.VAT	INC.VAT
CPF13	400W/230V	13x457	£49.98	£59.98
KA900E*	350W/230V	13x455	£59.98	£71.98

Clarke BELT SANDERS

Makita

- Ideal for surface removal, sanding and finishing

ABRASIVE SANDING BELTS IN STOCK

BS1

FROM ONLY £36.99 EX.VAT £44.39 INC.VAT

MODEL	MOTOR	M/MIN	EXC.VAT	INC.VAT
Clarke BS1	900W	380	£36.99	£44.39
Clarke CBS2	1200W	480	£79.98	£95.98
Makita 9911	650W	75-270	£94.99	£113.99

Clarke HARDWOOD WORKBENCH

- Includes bench dogs and guide holes for variable work positioning
- 2 Heavy Duty Vices
- Large storage drawer
- Sunken tool trough
- LxWxH 1520x620x855mm

CHB1500

£144.99 EX.VAT £173.99 INC.VAT

Clarke SHEET SANDERS

- Ergonomic design for optimum comfort

CON300

FROM ONLY £16.99 EX.VAT £20.39 INC.VAT

MODEL	SHEET SIZE	MOTOR	EXC.VAT	INC.VAT
COS200	190X90mm	150W	£16.99	£20.39
CON300	230X115mm	330W	£34.99	£41.99

Clarke STATIC PHASE CONVERTERS

- Run big 3 phase woodworking machines from 1 phase supply
- Variable output power to match HP of motor to be run

PC60

ROTARY PHASE CONVERTERS ALSO IN STOCK

CONVERT 230V 1PH TO 400V 3PH

FROM ONLY £229.00 EX.VAT £274.80 INC.VAT

MODEL	MAX. MOTOR HP	FUSE	EXC.VAT	INC.VAT
PC20	2HP	10Amps	£229.00	£274.80
PC40	3.5HP	20Amps	£269.00	£322.80
PC60	5.5HP	32Amps	£319.00	£382.80

Clarke CORDLESS DRILL/ DRIVERS

Clarke CONTRACTOR

FROM ONLY £39.98 EX.VAT £47.98 INC.VAT

powered by Li-Ion

CON18Li

MODEL	VOLTS	BATTS	EXC. VAT	INC.VAT
CCD180	18V	1	£39.98	£47.98
CCD240	24V	1	£47.99	£57.59
CON18Ni	18V	2 x Ni-Cd	£69.98	£83.98
CON18Li	18V	2 x Li-Ion	£89.98	£107.98

Clarke CIRCULAR SAWS

- Great range of DIY and professional saws
- Ideal for bevel cutting (0-45°)

FROM ONLY £41.99 EX.VAT £50.39 INC.VAT

CON185

*Includes laser guide

MODEL	MOTOR	MAX CUT 90/45 (mm)	EXC.VAT	INC.VAT
CCS185B	1200W	65/44	£41.99	£50.39
CON185*	1600W	60/40	£62.99	£75.59
CCS2	1300W	60/45	£59.98	£71.98

VAC KING WET & DRY VACUUM CLEANERS

- Compact, high performance wet & dry vacuum cleaners for use around the home, workshop, garage etc.

FROM ONLY £49.98 EX.VAT £59.98 INC.VAT

* SS = Stainless Steel

MODEL	MOTOR	CAPACITY DRY/WET	EXC. VAT	INC. VAT
CVAC20P	1250W	16/12ltr	£49.98	£59.98
CVAC20SS*	1400W	16/12ltr	£59.98	£71.98
CVAC20PR2	1400W	16/12ltr	£64.99	£77.99
CVAC25SS*	1400W	19/17ltr	£67.99	£81.59
CVAC30SSR*	1400W	24/21ltr	£99.98	£119.98

Clarke PORTABLE THICKNESSER

- Max thickness cap. 125mm and 250mm wide
- Planing depths adjustable from 0-2.5mm
- Powerful 1250W motor

£219.00 EX.VAT £262.80 INC.VAT

CPT250

Clarke OSCILLATING BOBBIN SANDER

- Provides exceptional finishes for deep & wide work pieces
- front edges & narrow inner curves
- Dust collection port
- Inc. 6 sanding sleeves/ bobbins

£139.98 EX.VAT £167.98 INC.VAT

COBS1

Clarke BOLTLESS SHELVING/BENCHES

- Simple fast assembly in minutes using only a hammer

FROM ONLY £29.98 EX.VAT £35.98 INC.VAT

SAVE 10% WHEN YOU BUY ANY MIX OF 4 FROM THIS RANGE SAVE AT LEAST £23.99 INC.VAT

150 KG PER SHELF (evenly distributed) Strong 9mm fibreboard shelves

CHOICE OF 5 COLOURS RED, BLUE, GREY, SILVER & GALVANISED STEEL

350 KG PER SHELF (evenly distributed) Strong 12 mm fibreboard shelves

MODEL	DIMS WxDxH(mm)	EXC.VAT	INC.VAT
150kg	800x300x1500	£29.98	£35.98
350kg	900x400x1800	£49.98	£59.98

Clarke WHETSTONE SHARPENER (200MM)

- Produces razor sharp cutting edges on chisels, planes, etc.
- Inc. 3 tool holding jigs, workpiece clamp & support frame, polishing paste & water trough

NEW

ONLY £119.98 EX.VAT £143.98 INC.VAT

Clarke PLANERS & THICKNESSERS

CPT800

- Ideal for DIY & Hobby use
- Dual purpose, for both finishing & sizing of timber

FROM ONLY £184.99 EX.VAT £221.99 INC.VAT

MODEL	PLANING WIDTH	MAX THICK. CAPACITY	EXC. VAT	INC. VAT
CPT600	6"	120mm	£184.99	£221.99
CPT800	8"	120mm	£209.98	£251.98
CPT1000	10"	120mm	£289.00	£346.80

Clarke OSCILLATING BELT & BOBBIN SANDER

- Can sand concave, convex, straight or multi-curved work pieces
- Dust collection port
- Inc. sleeves, drum & belt

£179.98 EX.VAT £215.98 INC.VAT

NEW

COEBS1

26170LH

FAST, EASY FINANCE ONLINE/INSTORE

NEW BUY NOW SPREAD THE COST

- Over 12, 18 or 24 Months
- Purchases over £300
- 12.9% APR, 10% Deposit*

EASY TO USE WEBSITE

NOW OVER 20,000 PRODUCTS ONLINE!

For hard-to-find, specialist items visit the Xtra section on machinemart.co.uk

NEW 516 PAGE CATALOGUE

Over 500 PRICE CUTS & NEW PRODUCTS

GET YOUR FREE COPY NOW!

- IN-STORE
- ONLINE
- PHONE

0844 880 1265

Clarke SLIDING COMPOUND MITRE SAW

BEST SELLER

- For fast, accurate cross, bevel & mitre cutting in most hard & soft woods
- 1800W motor
- Laser guide

£139.98 EXC.VAT £167.98 INC.VAT

CMS10S2

MODEL	BLADE DIA/BORE (mm)	MAX CUT DEPTH/CROSS	EXC.VAT	INC.VAT
CMS210 NEW	210/30	60/120	£59.98	£71.98
CMS10S2	254/30	78/340	£139.98	£167.98

Clarke ELECTRIC HEATERS

BEST SELLER

DEVIL 6003

FROM ONLY £49.98 EXC.VAT £59.98 INC.VAT

DEVIL 7003

* was £382.80 inc.VAT # was £430.80 inc.VAT

MODEL	VOLTAGE	HEAT OUTPUT KW	EXC.VAT	INC.VAT
DEVIL 6003	230V	1.5-3	£49.98	£59.98
DEVIL 7003	230V	3	£59.98	£71.98
DEVIL 6005	400V	2.5-5	£74.99	£89.99
DEVIL 7005	400V	5	£84.99	£101.99
DEVIL 6009	400V	4.5-9	£119.00	£142.80
DEVIL 7009	400V	9	£139.98	£167.98
DEVIL 6015	400V	5-10-15	£179.00	£214.80
DEVIL 7015	400V	15	£199.98	£239.98
DEVIL 7025	400V*	22	£299.00	£358.80
DEVIL 7030	400V#	30	£349.00	£418.80

Clarke TURBO FAN GAS HEATERS

Offering low cost, efficient heating

FROM ONLY £79.98 EXC.VAT £95.98 INC.VAT

*stainless steel

PROPANE GAS FIRED

MODEL	MAX OUTPUT KW	EXC. VAT	NOW INC.VAT
Little Devil II NEW	10	£79.98	£95.98
Little Devil SSII*	10.3	£84.99	£101.99
Devil 700 NEW	15	£99.98	£119.98
Devil 900	24.9	£139.98	£167.98
Devil 1600	36.6	£169.98	£203.98
Devil 2100	49.8	£259.00	£310.80

Clarke MITRE SAWS TC-SM2131

FROM ONLY £59.98 EXC.VAT £71.98 INC.VAT

Laser Guide ‡ Sliding Compound

- Quality Range of Mitre saws and blades in stock

2 YEAR GUARANTEE

MODEL	BLADE DIA/BORE (mm)	MAX CUT DEPTH/CROSS	EXC. VAT	INC. VAT
Einhell TC-MS 2112 NEW	210/30	55/120mm	£59.98	£71.98
Einhell TC-SM2131#	210/30	62/310mm	£129.98	£155.98
Einhell SM2534‡	250/30	75/340mm	£159.98	£191.98

Clarke MORTISING MACHINE

£174.99 EXC.VAT £209.99 INC.VAT

CBM1B

- Accurately creates deep square recesses
- Table size 150 x 340mm • Max. chisel stroke 76mm
- Robust cast iron base & column ensures stability & accuracy
- 95mm depth of cut

CHISELS AVAILABLE FROM £8.39 INC VAT

"...fast and accurate with a good solid feel...Excellent value for money." See www.machinemart.co.uk

Clarke QUARTZ HALOGEN INFRA-RED HEATER

- 3kW instant, clean odour free heat.

£129.98 EXC.VAT £155.98 INC.VAT

DEVIL 370SP

Clarke PROFESSIONAL BANDSAWS

Top Quality Bandsaws - ideal for professional workshop use. Strong steel body with solid cast iron table

- Table tilts 45° • Adjustable blade guide
- Supplied with stand, 4TPI wood cutting blade, rip fence, mitre guide, mitre gauge and push stick • Induction motors
- Includes stand

MAGNIFIED MITRE GUIDE

QUICK RELEASE FENCE

DRIVE-BELT TENSIONING

SOLID GROUND CAST IRON TABLE

CBS300

FROM ONLY £399.00 EXC.VAT £478.80 INC.VAT

MODELS ALSO FEATURE:

- MULTI-STEP DUST EXTRACTION OUTLET
- FLEXIBLE LED WORKLIGHT
- REMOVABLE DUST TRAY
- BLADE TENSIONING CONTROL

MODEL	THROAT DEPTH	MAX CUT 90°	MAX CUT 45°	EXC. VAT	INC. VAT
CBS300	305mm/12"	165mm	115mm	£399.00	£478.80
CBS350	340mm/14"	225mm	160mm	£498.00	£597.60

Clarke ROUTER TABLE

CRT-1

Router not included

BEST SELLER

- Converts your router into a stationary router table • Suitable for most routers (up to 155mm dia. Base plate)

£69.98 EXC.VAT £83.98 INC.VAT

Clarke GRINDERS & STANDS

- Stands come complete with bolt mountings and feet anchor holes

6" & 8" AVAILABLE WITH LIGHT

FROM ONLY £32.99 EXC.VAT £39.59 INC.VAT

STANDS FROM ONLY £47.98 INC.VAT

POLISHING KITS 4" TO 8" FROM ONLY £27.59 INC VAT

With sanding belt *8" whetstone & 6" drystone

MODEL	DUTY	WHEEL DIA.	EXC.VAT	INC.VAT
CBG6RP	DIY	150mm	£32.99	£39.59
CBG6RZ	PRO	150mm	£42.99	£51.59
CBG6RSC	HD	150mm	£54.99	£65.99
CBG6SB#	PRO	150mm	£54.99	£65.99
CBG6RWC	HD	150mm	£59.98	£71.98
CBG8W* (wet)	HD	150/200mm	£56.99	£68.39

Clarke CONTRACTOR BOSCH JIGSAWS

CON750

FROM ONLY £15.99 EXC.VAT £19.19 INC.VAT

*DIY #Professional

MODEL	POWER (W)	DEPTH OF CUT (WOOD/STEEL)	EXC. VAT	INC VAT
Clarke CJS380*	420W	55/6mm	£15.99	£19.19
Clarke CON750#	750W	80/10mm	£28.99	£34.79
Bosch PST700E*	500W	70/4mm	£44.99	£53.99

Clarke FOLDING MITRESAW STAND

CFMSS1

- Suitable for most sizes/makes of saw
- Inc. outriggers & rollers

ONLY £66.99 EXC.VAT £80.39 INC.VAT

IN STOCK – CONMW1 ONLY £131.98 INC VAT

Clarke 13" MINI WOOD LATHE

£149.98 EXC.VAT £179.98 INC.VAT

CWL325V

- Ideal for enthusiasts/ hobbyists with small workshops
- 325mm distance between centres • 200mm max. turning capacity (dia) • 0.2HP motor

Clarke DETAIL SANDERS

- Perfect for smooth and fine finishing along with hard to reach areas or curved surfaces

CDS-1V

FROM ONLY £19.98 EXC.VAT £23.98 INC.VAT

MODEL	WATTS	EXC.VAT	INC.VAT
PS105	105W	£19.98	£23.98
RT-0S13	130W	£24.99	£29.99
CDS-1V	280W	£28.99	£34.79

ALL MODELS INC. SANDING SHEETS

Clarke CONTRACTOR BOSCH ROUTERS

- Powerful heavy duty machines ideal for trade and DIY use

CR2 INCLUDES 15 PIECE KIT WORTH OVER £20

FROM ONLY £46.99 EXC.VAT £56.39 INC.VAT

CR1C

*DIY

MODEL	MOTOR (W)	PLUNGE (mm)	EXC.VAT	INC.VAT
CR1C*	1200	0-50	£46.99	£56.39
Bosch POF1400ACE	1400	0-55	£86.99	£104.39
CR2	2100	0-60	£124.99	£149.99

Clarke DRILL PRESSES

- Range of precision bench & floor presses for enthusiast, engineering & industrial applications

FROM ONLY £66.99 EXC.VAT £80.39 INC.VAT

B = Bench mounted F = Floor standing

CDP152B

MODEL	MOTOR (W) SPEEDS	EXC. VAT	INC. VAT
CDP5EB	350 / 5	£66.99	£80.39
CDP102B	350 / 5	£79.98	£95.98
CDP152B	450 / 12	£139.98	£167.98
CDP202B	450 / 16	£185.00	£222.00
CDP10B	370 / 12	£198.99	£238.79
CDP352F	550 / 16	£229.00	£274.80
CDP502F1100	1100 / 12	£499.00	£598.80

Clarke SCROLL SAWS

FROM ONLY £82.99 EXC.VAT £99.59 INC.VAT

BEST SELLER

- 50mm max cut thickness
- Air-blower removes dust from cutting area
- Table tilts 0-45°

CSS400C

MODEL	MOTOR	SPEED RPM	EXC. VAT	INC. VAT
CSS400B	85W	1450	£82.99	£99.59
CSS16VB	90W	550-1600	£94.99	£113.99
CSS400C	90W	550-1600	£114.99	£137.99

Clarke 12" DOVETAIL JIG

- Simple, easy to set up & use for producing a variety of joints • Cuts work pieces with a thickness of 8-32mm • Includes a 1/2" comb template guide & holes for bench mounting

CDTJ12

£57.99 EXC.VAT £69.59 INC.VAT

Professional woodworking tools and machinery from Record, Sheppach, SIP and more!

Visit www.machinemart.co.uk for more information

VISIT YOUR LOCAL SUPERSTORE

OPEN MON-FRI 8.30-6.00, SAT 8.30-5.30, SUN 10.00-4.00

BARNSLEY Pontefract Rd, Barnsley, S71 1EZ	01226 732297	**EDINBURGH** 163-171 Piersfield Terrace	0131 659 5919
B'HAM GREAT BARR 4 Birmingham Rd.	0121 358 7977	**EXETER** 16 Trusham Rd. EX2 8QG	01392 256 744
B'HAM HAY MILLS 1152 Coventry Rd, Hay Mills	0121 7713433	**GATESHEAD** 50 Lobley Hill Rd. NE8 4YJ	0191 493 2520
BLACKPOOL NEW STORE	OPENS MAY 2017!	**GLASGOW** 280 Gt Western Rd. G4 9EJ	0141 332 9231
BOLTON 1 Thynne St. BL3 6BD	01204 365799	**GLOUCESTER** 221A Barton St. GL1 4HY	01452 417 948
BRADFORD 105-107 Manningham Lane. BD1 3BN	01274 390962	**GRIMSBY ELLIS WAY,** DN32 9BD	01472 354435
BRIGHTON 123 Lewes Rd, BN2 3QB	01273 915999	**HULL** 8-10 Holderness Rd. HU9 1EG	01482 223161
BRISTOL 1-3 Church Rd, Lawrence Hill. BS5 9JJ	0117 935 1060	**ILFORD** 746-748 Eastern Ave. IG2 7HU	0208 518 4286
BURTON UPON TRENT 12a Lichfield St. DE14 3QZ	01283 564 708	**IPSWICH** Unit 1 Ipswich Trade Centre, Commercial Road	01473 221253
CAMBRIDGE 181-183 Histon Road, Cambridge. CB4 3HL	01223 322675	**LEEDS** 227-229 Kirkstall Rd. LS4 2AS	0113 231 0400
CARDIFF 44-46 City Rd. CF24 3DN	029 2046 5424	**LEICESTER** 69 Melton Rd. LE4 6PN	0116 261 0688
CARLISLE 85 London Rd. CA1 2LG	01228 591666	**LINCOLN** Unit 5. The Pelham Centre. LN5 8HG	01522 543 036
CHELTENHAM 84 Fairview Road. GL52 2EH	01242 514 402	**LIVERPOOL** 80-88 London Rd. L3 5NF	0151 709 4484
CHESTER 43-45 St. James Street. CH1 3EY	01244 311258	**LONDON CATFORD** 289/291 Southend Lane SE6 3RS	0208 695 5684
COLCHESTER 4 North Station Rd. CO1 1RE	01206 762831	**LONDON** 6 Kendal Parade, Edmonton N18	020 8803 0861
COVENTRY Bishop St. CV1 1HT	024 7622 4227	**LONDON** 503-507 Lea Bridge Rd. Leyton, E10	020 8558 8284
CROYDON 423-427 Brighton Rd, Sth Croydon	020 8763 0640	**LONDON** 100 The Highway, Docklands	020 7488 2129
DARLINGTON 214 Northgate. DL1 1RB	01325 380 841	**LUTON** Unit 1, 326 Dunstable Rd, Luton LU4 8JS	01582 728 063
DEAL (KENT) 182-186 High St. CT14 6BQ	01304 373 434	**MAIDSTONE** 57 Upper Stone St. ME15 6HE	01622 769 572
DERBY Derwent St. DE1 2ED	01332 290 931	**MANCHESTER ALTRINCHAM** 71 Manchester Rd. Altrincham	0161 9412 666
DONCASTER Wheatley Hall Road	01302 245 999	**MANCHESTER CENTRAL** 209 Bury New Road M8 8DU	0161 241 1851
DUNDEE 24-26 Trades Lane. DD1 3ET	01382 225 140	**MANCHESTER OPENSHAW** Unit 5, Tower Mill, Ashton Old Rd	0161 223 8376
MANSFIELD 169 Chesterfield Rd. South	01623 622160		
MIDDLESBROUGH Mandale Triangle, Thornaby	01642 677881		
NORWICH 282a Heigham St. NR2 4LZ	01603 766402		
NOTTINGHAM 211 Lower Parliament St.	0115 956 1811		
PETERBOROUGH 417 Lincoln Rd. Millfield	01733 311770		
PLYMOUTH 58-64 Embankment Rd. PL4 9HY	01752 254050		
POOLE 137-139 Bournemouth Rd. Parkstone	01202 717913		
PORTSMOUTH 277-283 Copnor Rd. Copnor	023 9265 4777		
PRESTON 53 Blackpool Rd. PR2 6BU	01772 703263		
SHEFFIELD 453 London Rd. Heeley. S2 4HJ	0114 258 0831		
SIDCUP 13 Blackfen Parade, Blackfen Rd	0208 3042069		
SOUTHAMPTON 516-518 Portswood Rd.	023 8055 7788		
SOUTHEND 1139-1141 London Rd. Leigh on Sea	01702 483 742		
STOKE-ON-TRENT 382-396 Waterloo Rd. Hanley	01782 287321		
SUNDERLAND 13-15 Ryhope Rd. Grangetown	0191 510 8773		
SWANSEA 7 Samlet Rd. Llansamlet. SA7 9AG	01792 792969		
SWINDON 21 Victoria Rd. SN1 3AW	01793 491717		
TWICKENHAM 83-85 Heath Rd.TW1 4AW	020 8892 9117		
WARRINGTON Unit 3, Hawley's Trade Pk.	01925 630 937		
WIGAN 2 Harrison Street, WN5 9AU	01942 323 785		
WOLVERHAMPTON Parkfield Rd. Bilston	01902 494186		
WORCESTER 48a Upper Tything. WR1 1JZ	01905 723451		

5 EASY WAYS TO BUY...

- SUPERSTORES NATIONWIDE
- ONLINE www.machinemart.co.uk
- MAIL ORDER 0115 956 5555
- CLICK & COLLECT OVER 10,000 LOCATIONS
- NEW CALL & COLLECT AT STORES TODAY

NEWS & EVENTS

All the latest events and news from the world of woodworking

Get a shed start

Following on from last issue's story about women being admitted to a 'Shed' in Cheshire we bring you this follow up, as the next round of grant applications to set up new community sheds opens on Monday 17 July with a 24 September deadline.

Grants of between £250 and £1,000 are available from the Sheds Grant Fund – with applicants encouraged to apply for some of the tools and equipment they need for their activities or ongoing costs, such as help with their rent or insurance.

'Sheds' are community workshop spaces where people can come together to take part in practical skills and activities. They are designed and run by their members and provide opportunities for people to share tools, resources and skills in order to create, learn and develop social networks.

Royal Voluntary Service, with funding from the Asda Foundation, has established a Sheds Grant Fund to provide small-scale funding to Sheds that are looking for help with either set up, or early-stage development costs.

The Shed movement follows a blueprint from an Australian project and since the first Men's Shed opened in the UK six years ago, there are now over 300 in the UK with three new Sheds on average opening a week. Sheds are often places for older men to come together and work on either individual or community projects – but are now increasingly seeing younger men and women getting involved and benefiting from the social interaction and skill sharing that are at their heart.

The fund is being supported by each of the National Sheds Associations across the regions.

www.royalvoluntaryservice.org.uk

PHOTOGRAPHS COURTESY OF RVS.ORG.UK

Makita train up building heroes

Building Heroes is a charity formed in 2014 to deliver construction skills training courses, to military veterans to enable them to find employment in the industry.

Following the many military conflicts in which British forces personnel have been involved, and the recent scaling back of funding, many members of the Services are being discharged. Some carry significant physical damage, others have different problems caused by their experiences in the Services, often compounded by the impact of their discharge.

Power tool manufacturer Makita is supporting this worthwhile industry initiative by providing technical training within a specially designed course, originally founded at Chichester College, West Sussex. This has expanded to encompass Reaseheath College and Colchester Institute, to encourage the construction industry to focus on the many attributes of these troops. Disciplined and trained, ex-Service personnel can give core strengths to any expanding business.

There are approximately 120,000 unemployed ex-military personnel of working age in the UK today. At the same time the UK construction industry is facing a 230,000-person skills shortage. Building Heroes aims to tackle unemployment amongst ex-Service personnel by offering targeted skills training and supporting them into employment in the building trades.

PHOTOGRAPH COURTESY OF JACKIE BIGGIN MEDIA

The founders of Building Heroes approached Chichester College, one of England's largest Colleges with 15,000 students, and asked it to design a foundation course. This would have to equip a veteran with core trade skills and a recognisable qualification that would aid employment entry to the construction industry. The Construction Faculty at Chichester College created the Building Heroes Property Maintenance Course as a multi-disciplinary programme of maintenance skills covering internal and external structures, plumbing, tiling, painting and decorating, health and safety responsibility and business management requirements. Success on this comprehensive five-week residential course will qualify the attendee to Level 1 Health and Safety in the Construction Environment and the award of the valuable Construction Skills Certification Scheme (CSCS) card, essential for employment in the industry.

www.buildingheroes.org.uk

Shows

Wild Wood 27 – 29 May 2017, Wakehurst Place, West Sussex www.kew.org/visit-wakehurst/whats-on

Green Fair & Scythe Festival 11 June, 2017 Thorney Lakes, Somerset www.greenfair.org.uk

Wood Show 17–18 June 2017, Weald and Downland Museum, Singleton, West Sussex www.wealddown.co.uk/events

Craft and Design Fair 23 –25 June 2017, Henley Meadows, Henley-on-Thames www.craftexperience.co.uk

Lammas Festival 29 – 30 July 2017, Western Lawns, Eastbourne, East Sussex www.lammasfest.org

PHOTOGRAPH BY CAROLE MELBOURNE

Green Fair & Scythe Festival

Web links for you

Websites

- **www.joewoodworker.com**

An American website devoted to making and using vacuum presses for formed veneer pressing work. Lots to read and learn about if that is your bag...

YouTube

- **www.youtube.com/watch?v=IJ4VoqRda2M**

A japanese carpenter showing how to put a small section of roof together Japanese style; you don't need the commentary to understand what he is doing and the quality of his craftsmanship!

- **www.youtube.com/watch?v=AZ1_FkB8kqw**

How to split a log perfectly if you want to make lots of Windsor chair legs.

Pinterest

- **'Wooden Spiral Staircase'**

Enter those search terms for some impressive and head-scratchingly difficult designs for stylish wooden staircases

A vast panoramic view from Boxhill, Surrey

PHOTOGRAPH COURTESY OF SHUTTERSTOCK

Trees for life

The box tree

A continuing series looking at trees, timber and their uses. This month we look at Boxwood

This month we look at a rather unusual tree whose timber is only found in small but very useful logs – Box (*buxus sempervirens*)

Box Hill in Surrey with its breathtaking views from the top of the North Downs and stunning diversity of wildlife, takes its name from the ancient box woodland found on the steep chalk west-facing slopes overlooking the River Mole. The area is owned and managed by the National Trust. More than three quarters of a million people visit this area of outstanding natural beauty every year but how many understand the significance of the tree and its timber?

Box or common box

Box belongs to a vast family of trees found in Europe, Asia, Africa and the Americas but the one that we recognise and make use of in the UK is *buxus sempervirens* species. Useable timber usually comes in the form of quite small diameter logs derived from its branches but its dense hard form makes it suitable for a variety of small-scale uses. It is a creamy coloured wood with faint darker streaks sometimes interrupting the evenness of grain and colour. It is prized for its utility as a wood despite its size. Box is the tree and boxwood is the material generated from it. It is capable of growing up to 12 metres high but is compact in shape with smooth, grey bark. The shiny, dark green leathery leaves are 10 – 25mm long and oval shape on short stems. Male and female flowers occur on the same tree in April and May. Several

PHOTOGRAPH COURTESY OF WIKIPEDIA COMMONS

Oval shaped leaves on a frosty morning

PHOTOGRAPH COURTESY OF WIKIPEDIA COMMONS

A tight even bark pattern

PHOTOGRAPH BY GMC/ANTHONY BAILEY

Once upon a time rules were all made from box

male flowers and a terminal female flower occur in each green-yellow flower cluster. Wind pollination occurs for which Box Hill in particular is ideal. Female flowers develop into a dry, green capsule ripening into a woody brown seed case.

Symbolism

Box was regarded as a very sombre plant and in some places sprigs of box were given to mourners at funerals to throw onto coffins.

Typical uses

Box is favoured for wood engraving and in the past for making printer's type, scale rulers, also violin pegs and woodwind instruments. It has frequently been used as stringing on the edges of antique furniture and for chess pieces, either natural for the white pieces or dyed black as a sort of false ebony.

Hazard

All parts of the tree are toxic and can cause skin irritation or even a stomach upset if ingested.

Wildlife

Box provides a dense sheltered habitat for small birds and mammals as well as insects including bees. ➤

PHOTOGRAPH COURTESY OF WIKIPEDIA COMMONS

Did you know

Boxwood is the heaviest of our native timbers and will not float in water.

Box can have a rather wild growing habit

History

In the past it has been used for the handles of dirks and daggers and bagpipes. General Thomas F Meagher decorated the hats of the Irish Brigade men with boxwood during the American Civil War as he couldn't find any shamrock.

PHOTOGRAPH BY RICHARD FINDLEY

Two boxwood and one African blackwood rings

PHOTOGRAPH COURTESY OF WIKIPEDIA COMMONS

Natural or dyed box is perfect for chess pieces

PHOTOGRAPH BY DENNIS KEELING

Dennis Keeling shaping a segmented box vessel

Timber conversion

It is rare to find box felled; you need to buy it from a specialist timber supplier. Because the sections can be quite small, conversion needs to be carefully done to avoid waste. Fortunately it is straight grained with small tight knots so it is reliable however it is cut. It needs slow seasoning and the ends of logs to be coated while drying but it is very stable once dried.

Working characteristics

It is a dense timber with a moderate blunting effect on cutting and is not very easy to plane. It does turn quite well but pre-drilling for screws etc is essential. It also glues satisfactorily, it accepts stains and polishes well, when carved or turned.

PHOTOGRAPH COURTESY OF WIKIPEDIA COMMONS

A typical section of dense boxwood

PHOTOGRAPH BY GEORGE WATKINS

A section of box mounted ready to turn

PHOTOGRAPH BY GMC/ANTHONY BAILEY

Good quality tool handles were made from box

A natural edge box in boxwood

PHOTOGRAPH BY GMC/ANTHONY BAILEY

Did you know?

In Latin 'buxus' means flute, 'semper' means always and 'virens' means green or vigorous.

PHOTOGRAPH COURTESY OF SHUTTERSTOCK

Well clipped box lends itself to ornamental designs

Diseases

Box blight is a fungal disease which can cause dieback and bare patches, particularly on hedging and topiary. It should be noted that cultivated box is frequently not common box, but other related species. Finished items containing heartwood can be vulnerable to common furniture beetle.

Fascinating facts

Box was considered to have an important role in keeping witches from entering the house or if used as border planting, preventing the stealing of plants.

Make your own discoveries

Just an excuse to take in the views of a very beautiful part of the country and see if you can spot the living box trees: *www.nationaltrust.org.uk/box-hill* for more information and to plan your visit. ■

HELPING SHAPE YOUR PROJECTS

305mm Band Saw LB1200F

Cutting Capacity
Max height: 165mm
Throat width: 305mm

Wheeled Stand
Stand with two wheels and a handle adds mobility for repositioning of the machine.

Quick-Release lever
Easily loosen or tighten the blade.

LED Job Light

Bevel Cutting
Base tilts 45-degrees

45 YEARS OF MAKITA UK
1972-2017

Makita®

Visit our website for more information www.makitauk.com

Introduction to Rotary power carving

PHOTOGRAPHS BY ANTHONY BAILEY/GMC

Mark Baker introduces the ever-popular method of rotary power carving, with tips on choosing tools and getting the most out of them

Rotary power carving is one aspect of carving that is rapidly increasing in popularity. It seems the bird carving fraternity took to it and since then it has been taken up by many other carvers working in many other forms. Let's face it, this working method is not just used by carvers; there are jewellers, metal workers, engineers, model makers, stoneworkers and more who enjoy and capitalise on the benefits of rotary carving techniques.

With the correct cutters and blades, power carving can be used to quickly give shape to a piece or – with a change of cutter or blade – be capable of the most delicate detailing. I am not saying that it is a cure-all approach to carving, but it is a route with considerable merit for exploration.

There are scores of products in this section of the market to suit all the various materials, shaping methods, detailing and finishing required and all to various budgets. Obtaining the items you need is quite an easy process, but making the right choices can be somewhat intimidating when you first start.

In future issues I will look at specialised units like percussive carving tools, micro motors and angle-grinder power carving items, but in this article I am going to focus on the two types of rotary carving unit: suspended items with flexible shafts and smaller hand-held units often seen in DIY and specialist stores.

I hope that this is an easy guide that will point you in the right direction with some top tips and pointers on tool choice, usage, safety and other bits and pieces that will help you on your rotary power carving journey.

Carving units

Rotary carving units come in many shapes and sizes. Effectively they are nothing more than a unit that houses a motor, which in turn causes a spindle to rotate. Attached to this is a clamping device that allows the secure holding of cutters and the user to hold and manipulate the device safely and easily. Most units now have variable speed, which is very important for control and the ability to use different cutter types and materials effectively.

Depending on the type of unit, you can have the motor and holding device integral to each other and fit various cutter types into them. If required, a handpiece to accept cutters can be fitted onto a flexible drive. Handpieces come in various shapes and sizes and can employ different cutter locking methods. Typically, these include a Jacobs-type fitting, which is tightened using a toothed key, a collet system which uses collets of various internal dimensions to suit the various shank sizes available and is spanner operated to open and close. More recently there are keyless chuck units which have a twist-lock mechanism – although these are more commonly found on the smaller units like the micro-motors. These keyless units require the motor unit to be hung up near the user to facilitate the easy use and manipulation of the handpiece.

Other units have larger, more powerful motors which need to be hung up near the user. These have flexible drive shafts fitted onto them with interchangeable handpieces attached to accept cutters. Many units can be bought with accessory kits as part of a package, but these kits are generally a mix of cutters and bits and pieces that are more suited to use around the house than carving.

Most units available now have variable speed options which allow you to change the speed to suit the material being worked on and the cutter size and type used.

Different types and sizes of rotary carving unit: a suspended motor option with flexible drive shaft and hand-held units which come in various sizes

A slimline hand-held unit with accessory kit

Cutters and accessories

It is all very well and good having a rotary unit, but it is no use whatsoever without some cutters – also called bits and burrs – that will allow you to shape and refine work quickly and cleanly. Here are some of the options available and what they can be used for. There are myriad types with different shaft and head sizes so try and pick the right cutter for the job at hand. Do not overload the cutters and motor with heavy pressure. This should not be an issue if you have selected the right cutter size, shape, speed and grit grade.

The trick is to match the cutter shape, size and coarseness of grit grade to match the work and material you intend to do. Most cutters and burrs come in one section but the cutting, sanding, and polishing discs can come as part of an interchangeable system with a shaft onto which various heads are fitted.

Whatever type of cutter, burr or bit you use, follow the manufacturer's guidelines for correct working speed ranges for each type selected.

Here is a very quick breakdown of the common types.

Diamond and ruby cutters

Available in a wide variety of grit grades, they can, depending on type chosen, cut wood, man-made wood boards, plastic, acrylic, polymer, ceramic, glass and metal. They are ideal for refining the surface and adding in fine detail. You find decoy and bird carvers use these a lot.

Carbide tooth cutters

Available in coarse, medium or fine grades and various shapes. They have evenly spaced teeth and can be used on wood, manmade wood boards, plastic, acrylic, polymer and – check with the manufacturers first – some soft stones. They are ideal for the initial shaping stages of a project. ➤

Structured-tooth carbide cutters

Available in coarse, medium or fine grades, they can be used on wood, man-made wood boards, plastic, acrylic, polymer and – check with the manufacturers first – some soft stones too. They have randomly arranged teeth and are ideal for the initial shaping of a project.

Milled carbide and HSS cutters

They come in a variety of grades and are suitable for wood, manmade wood boards, plastic, acrylic, polymer and metal. They can be used to shape and refine work.

Various sanding accessories

These are commonly made from diamond, ceramic, silicone, carbide and aluminium oxide. Available in a wide variety of shapes and materials there is an abrasive product to suit all materials available, just check with the manufacturer as to what is best. Used for shaping and refining the surface.

Man-made materials

These include aluminium oxide, ceramic and many more man-made compounds. Check with the manufacturer details, but depending on what they are made from, these can be used on a variety of materials. Although they come in a variety of grades and can be used to shape work, they are typically used in the final stages of refining and adding detail.

Spiral cutters for drilling and side cutting

Pick wisely. Some cutters can be used for side cutting and others cannot, so check with the manufacturer to make sure you buy the right type. They can be used on metal, wood, man-made boards, polymer and acrylic.

Polishing, sanding and accessories

Available in various types of wire or other materials impregnated with abrasive. Again the variety on offer is huge. These are used to clean up and refine work. The differing shapes allow you to get into crevices and deal with textured surfaces where normal abrasives would remove too much detail.

Specialist cutters

There are quite a few specialist cutters available which have cutting teeth at right angles to the shaft. Depending on the material they are made from, they can be used to cut, wood, manmade wood board, plastic, acrylic and polymer. These are used for primary shaping.

Cutting discs

These can be made from various materials and this will dictate which materials they can cut. There will be something available for every material you encounter. Some use a quick-change shaft arrangement.

Various types of buffing accessories

Again, there are many shapes and material types, but ultimately, use the shape and type you need to suit the shape and material of what you are working with. They can be coated with micro polishes and compounds to refine applied surface finishes and used to clean up oils, waxes and other finishes. Polishing compounds are available to refine all finishes and materials you are likely to encounter. Such polishing systems are often overlooked, but can be very effective.

Personal protective equipment

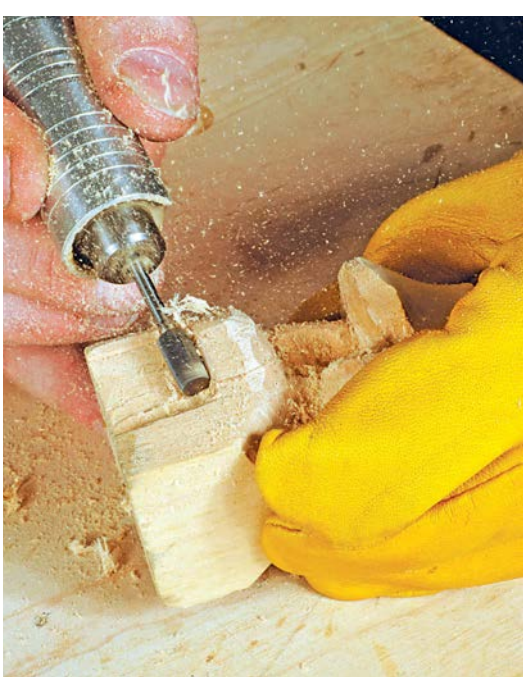
I am using eye protection, a face mask to protect my lungs and an extractor which sucks the dust and debris away from the work. Protecting yourself to minimise the risk from chips, debris and dust is a must. You can opt to use a full visor and a different type of mask – even a full-powered respirator – something like the Trend Airshield or similar is worth considering. In addition, if you carve near the body, a leather apron is a wise choice to prevent damage from cutter skids. Be careful of loose clothing too, these can get caught in bits if a catch occurs. There are various ways and pieces of equipment to help with this issue, so find a set-up that works for you. But do not forget to use it. It is often jobs that 'just take a minute' that cause accidents. Never take chances with your health!

Securing your work

It is vital for both success and safety that you are able to hold your work securely. Working with a clamping system or a vice that allows you to move the piece around and fix it in a variety of angles is ideal. It also leaves both hands free to hold the handpiece firmly. If you can use a clamp or vice effectively, then please do so, because they are the safest options.

Securing your bits and cutters

You must ensure that you secure your bits and cutters properly. You should secure the shaft of the cutter a minimum of half the overall length in the chuck/collect of the handpiece – but more is better. I tend to go in as far as I can, but of course leave enough proud so I can reach the work properly. Check with the manufacturers to see what they recommend. Also, if using a chuck/collet fitting, make sure the collet is the right size for the cutter.



Gloves

Many gloves are available that help you grip work securely whilst providing support and protection to your hands. Some people also use a glove on the hand which the handpiece is held in. Many choose one which minimises vibration in the areas that grip or support a tool. It is best practice to take regular breaks when power carving and move your hands after doing so; 15 minutes at a time usually works for me – any longer and I get cramp or my hands become tired. Long-term vibration running through the hands coupled with repetitive holding can cause easily avoided problems.

Holding by hand

Clamping a piece is not always possible, so it may – depending on the size – be necessary to hold it in your hand. Some carvers even hold it in their lap – see earlier mention of leather apron. Of course, you need to have control of the work and be able to feel it, but you must protect your hand in case you slip with a cutter. I repeat, this should only be done as a last resort. If you choose to hold work in your hand, leather gloves afford better protection against toothed-cutters than woven-mesh anti-slash/stab or rubberised gloves which can easily become caught and wind in on the cutter teeth. Leather gloves will provide abrasion resistance, slash protection from cutters and they are long enough to protect your wrists too. Though, I repeat, this method is only recommended if you cannot find a better holding method. ➤

Top Tip 1

Most people think of sanding as a final process which is done to refine the surface ready for the application of a finish. But abrasives are cutting tools just like gouges and the variety of shapes and grit grades on offer is phenomenal. They can be used to sculpt and shape just like any other tool. That said, work smart and consider the safest and best working practices you can to get the shape and desired result.

Many people are wary of sanding their work – especially when it's hand carved. Making sure you pick the right abrasive for the job, as well as the correct shape, is vital. Choose badly and you'll lose detail, not get to the areas you need to and potentially ruin your hard work. Do a bit of research; many of the latest developments are in cutting technology, which include abrasives. Have a look at the finish from this 3M bristle brush in the hair section and compare it to the unsanded areas.

Top Tip 2

Have some adhesive or cyanoacrylate at hand in case something goes wrong. But remember, cyanoacrylate does not always stain or pyrograph well and can show through some finishes.

Top Tip 3

Many people end up having lots of cutters and bits so a decent storage area is essential. This way you can see everything clearly and have things to hand when required. Also they do not bang together, which damages the cutting edges.

Top Tip 4

I certainly don't want to tell anyone how to suck eggs, but if you are using a drop-down or suspended motor system, ensure that the motor is in a position that does not offer too much resistance to you as you work. The flexible lead needs to be able to move freely so you can hold and manipulate the handpiece easily. You also need a hook-up system which is secure and prevents the motor from twisting too much when started; these can be bought or homemade. The torque is powerful; I have seen incorrectly secured motors spin when starting up, so be careful.

Suppliers

Contact Dremel
Web www.dremel.com

Contact Shesto – Rotary carving units and accessories
Tel 020 8451 6188
Web www.shesto.co.uk

Contact Axminster – Rotary carving units and accessories
Tel 03332 406 406
Web www.axminster.co.uk

Contact Foredom – Rotary carving units and accessories
Tel 01633 400 847
USA enquiries:
Web www.foredom.net

Contact Mastercarver – Rotary carving units and accessories
Tel 01473 784 983
Web www.classichandtools.com
USA enquiries:
Web www.woodcarverssupply.com

Contact Silverline – Rotary carving units and accessories
Web www.silverlinetools.com

Contact Proxxon – Rotary carving units and accessories
Tel 0333 240 6967
Web www.brimarc.com

Contact Kutzall – Rotary carving cutters/burrs
Tel 01633 400 847
USA enquiries:
Web www.kutzalltools.com

Contact Saburr-tooth – Rotary carving cutters/burrs
Web www.toolpost.co.uk
USA enquiries:
Web www.saburr-tooth.com

Contact Duragrit – Rotary carving accessories only
Tel 0333 240 69 67
Web www.brimarc.com
USA enquiries:
Web www.duragrit.com

Contact Weecher – Rotary carving units and accessories
Web www.weecher.com

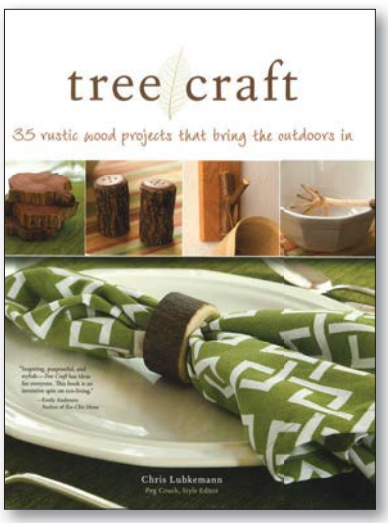
Contact Kaizen Bonsai – Rotary carving accessories
Web www.kaizenbonsai.com

BOOK & DVD REVIEWS

Anthony Bailey is enthralled by this latest selection

Tree Craft – 35 rustic wood projects that bring the outdoors in

Chris Lubkemann



Even I, as a country dweller and a lover of trees and all things woody, had not until now imagined there could be so many variations of trunk and branch form repurposed as functional and beautiful objects. This book has been available for some time, but reading through it is the promise of no less than thirty five projects that makes it a worthwhile purchase in addition to the beautiful photography and styling. It starts with choosing and preparing branch and log wood and knife sharpening. It demands only a limited tool set which makes it attractive, then we go through the chapters – Decorating, examples being variants of bud vase, photo frames, pendants etc. Dining – coasters, name logs and salt and peppers shakers. Living – clock, coat rack, curtain rod, umbrella stand. Lastly – Playing and Working, such as chequer set and letter opener. I should stress there are many more projects, in fact something for everyone which can grace your home or be given as presents. I think I would characterise the projects as 'homely' or at least compatible with pretty much any home, so this book would be a worthwhile investment and a chance to have a go without vast knowledge or outlay.

ISBN: 9781565234550
Price:£14.99
Web: www.thegmcgroup.com

Peter Sefton Fine Furniture Making Series 1 DVDs – an Artisan Course

I know Peter Sefton quite well, having met him a number of times. He was kind enough to write a monthly diary in the magazine about his students' progress a while ago. Peter is a designer, maker and highly respected teacher who is a member of the Worshipful Company of Furniture Makers, so anything he says and does, is worth giving attention to. I sat down to watch the first of this six-disc set with great anticipation and I was not disappointed. The image quality, production and smooth delivery of Peter's instruction is commendable. If you want to watch all six discs you need to set aside a fair bit of time to do it, and you've got to want to learn all that Peter is teaching you. That said, you can break it down into chunks because each disc is divided into chapters covering a separate topic.

The five parts are: selection and using handplanes (two discs); chisel and plane grinding; chisel and plane sharpening; timber selection and timber preparation. I was particularly interested in the level of detail Peter would delve into – quite a lot, as it turns out. I wasn't looking to find fault, but I did want to see if he covered things like different blade pitch angles and exotic timbers protected under CITES. It was all there.

Anyone lucky enough to go on one of Peter's intensive courses will know just how thorough he is; the same standards have been applied here in a very watchable way. It is almost as if he is standing at your elbow, giving you guidance. We very much look forward to the next installment.

Individual boxed DVDs priced at £18.99 – £24.99 or entire set currently on special offer £90
Web: woodworkersworkshop.co.uk Also available on Amazon

Mortise & tenon joints

Peter Wood guides us through the techniques for Windsor chairs, paying special attention to getting the joints as tight as possible

PHOTOGRAPHS BY PETER WOOD

The mortise and tenon joint works well when the force is pushing along the tenon not side to side. You can see on this chair the legs are fine with the force straight down the tenon as you sit. The back is supported with the forward facing spindles countering the force generated against the rear-facing spindles as you sit on the chair. In contrast, the back of a side chair has to have the spindles behind the line of the bow. If they were in line the force of you leaning back could break the tenons at the base. Bringing the bow forward 50mm creates a triangle so as you lean back on the chair the force is transferred down the spindles. Each joint is aligned to maximum effect.

When I'm teaching or making chairs I need the joints to be tight but not too tight! When fitting and assembling a chair I need to be able to easily put it together and easily take it apart. When fitting I could go through this process twice (if things are going well) or 10 or more times if my or a student's measurements are off. While in an ideal world we want the joint as tight as possible, this would make disassembly almost impossible. A nice 'push fit' is ideal. As soon as you have to wiggle the tenon to free it you enlarge the mortise and end up with a loose joint. ➤

1 The most basic joint is a blind mortise and tenon. Note from the picture the tenon reaches to the bottom of the hole so we have maximum strength and maximum gluing area. A rule of thumb is you want the mortise to be as deep as the diameter of the tenon (though deeper is better).


1

2 To increase the gluing area or if the wood you are mortising into is too thin, you can increase the depth by drilling a through mortise and tenon. It's a good idea to drill from the top side of the mortise to reduce the chance of breakout.


2

3 The tenon has the maximum gluing area, and if you're in an Arts and Craft mood, is a good feature to add to your work.

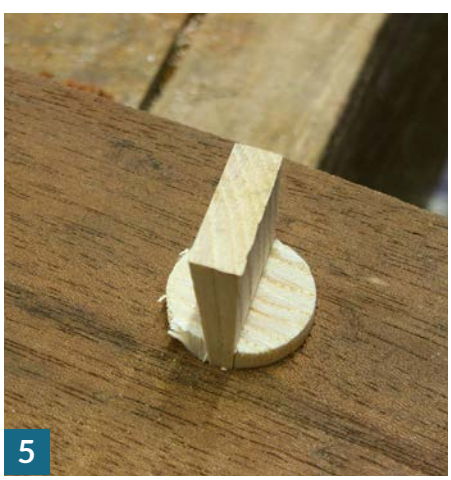

3

4 While you may make a tight joint through the tenon sometimes, especially when drilling by hand, the bit rocks and creates an enlarged hole. To increase the tightness of the tenon and create another feature, cut a slot in the tenon and create a 'wedged' through tenon.


4

Tip:
Always cut towards the vice, not side to side. The force of the cut will brace against the bench rather than the work moving in the vice.

5 Cut a wedge out of any straight grained hardwood the same diameter as the hole. With a slot cut the wedge should knock straight in but if the joint is tight the slot for the wedge may close up making it hard to start the wedge. Open the slot with a chisel and once in the wedge will open up the slot. Please note – position the slot perpendicular (at right angles) to the grain direction, if you follow parallel with the grain, the wedge could split the wood.


5


6

6 The slot needs to be ⅔ depth of the mortise, hopefully the wedge will reach almost to the bottom of the slot creating a very tight joint.

7 For the top of a double bow Windsor chair I favour a through mortise and tenon joint for the top bow. This bow is usually delicate so needs the extra depth of the through


7

joint, it's also advantageous that the bow's height can be adjusted while gluing with the spindle still over length. The tenons can be left very overlength, enabling easy location of each tenon when fitting the top bow.

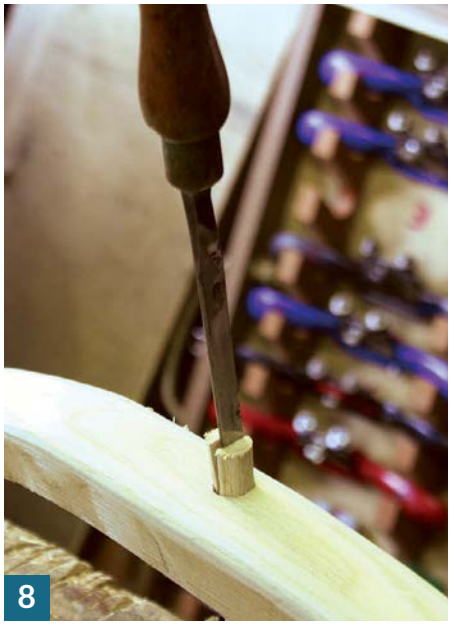
8 I would then cut the tenon 5mm longer than flush and use a chisel to split open a slot for the wedge (perpendicular to the grain). Be careful, it's very difficult to split a slot if you cut the tenon flush. There is no space for the split to open.

9 When you lean back on the steam-bent bow of a Windsor chair, over time the force generated acts to pull the tenon out of its mortise. To counteract this use a small file to open the top of the mortise; you want to create an oval exit hole. When you knock the wedge in it will spread the tenon into the oval, so, when the top bow is forced upwards the joint is tightened rather than loosened.

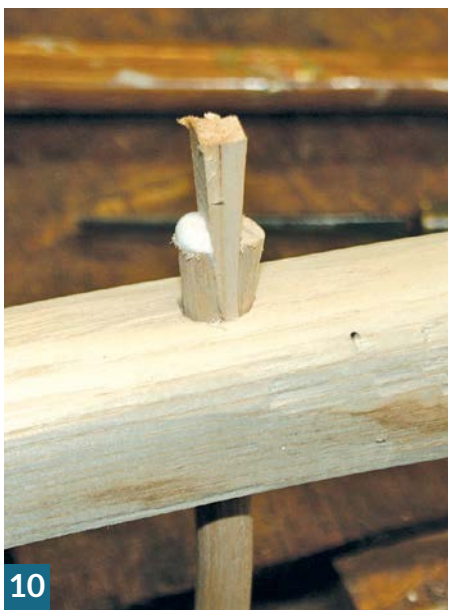
10 I glue my wedges but only on one side. This is because the end grain glue joint inside the mortice is weaker than the long grain joint of the wedge in the slot. If you glue on both sides of the wedge and the tenon shrinks there is a chance the end grain mortise joint will fail before the wedge and the whole joint will come loose. Leaving one side of the wedge loose means the wedge will move rather than the joint failing.

11 Finally the mortise and tenon is a joint that can easily be 'put right' with the addition of a wedge. We've seen this with the through mortises being tightened with the wedge but you can also 'fox-wedge' a blind tenon. After cutting a slot in the tenon, measure the depth of your mortise; you want the wedge to be pushed into the slot as it hits the bottom of the mortise. Be careful though, as you can see here the wedge is too long and the mortise has been drilled too close to the edge almost pushing through!

12 The mortise and tenon is a wonderful simple joint; easy to get right with matching drills and tenoning tools. It's forgiving and can be tightened with wedges if your measuring is slightly off. If used correctly it will make a striking feature on your work as well! ■


8


9


10


11


12

Router hinge jigs

It's very easy to become unhinged if you don't know the right way to hang doors, but a simple jig is all you need

The router is a perfect way to inset door hinges; all you need a straight cutter, guidebush and jig plus a sharp chisel. Each size of hinge will need a different jig but since they are so easy to make and are easy to store afterwards this isn't a problem. It is a lot less bother than trying to chop out hinge mortises by hand. A small or medium size router is best since they can sit on a door edge or frame more easily than a large machine.

Making the jig

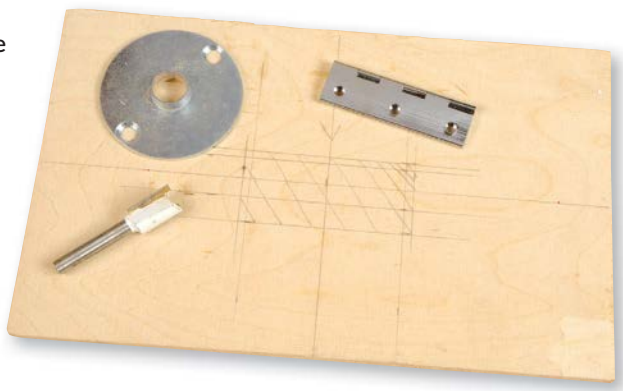
Decide on a suitable hinge size that is strong enough for the job. Cupboard doors are thinner than room doors so the width of each flap needs to be narrower. Wide doors or doors subject to a lot of wear and tear may need an extra hinge near the top one to cope with the extra loading.

A smaller machine not only sits on a door or frame more easily but it should also have a smaller diameter guide bush. This helps make machining easier and allows the cutter to get closer into the jig corners. This reduces the amount of squaring out with a chisel afterwards.

Take a smallish rectangular offcut of 6 or 9mm MDF and mark across it the length of the hinge. Now mark the folded width of the hinge including the knuckle in the middle of the width of the MDF. This will be roughly where the jig will sit on the door edge.

Now measure the difference in diameter between the guidebush and the chosen cutter. Divide this figure and this will be how much bigger the jig cutout needs to be for the cutter to create the right size opening. A typical example: 16mm dia guidebush minus a 9.5mm straight cutter = 6.5mm. Divide to give 3.25mm but round it down to 3mm as the 0.25mm is hard to measure out exactly.

Mark an extra around 3mm at each end of the jig, don't worry about



Choose the appropriate hinge size, then the guidebush and a suitable cutter which can be a straight bit or a hinge mortising bit. Mark the hinge position in the middle of the jig board and add the guidebush to cutter offset around the ends and one long edge

altering the width as you now need to make a U-shape cutout so the jig can be moved across slightly afterwards to account for the guidebush offset amount.

Doing a test cut

Now lay the jig on the door edge and work out where it should be widthwise. Some hinges will be narrow enough that you won't need to machine right across the width of the door so deciding this is quite important. Mark the jig where the door edge is and remove it so you can neatly screw a fence in place using a fillet of softwood. At this stage don't glue it until you have done a test cut.

Do a test cut on a scrap of wood to check width position. Fit your straight cutter or a mortise cutter if you have one and press the static cutter down on to the test once the jig is clamped in place. Now place the unfolded hinge under the depth stop which you need to press down on the hinge and lock off. I would suggest the depth needs to be a fraction more than hinge thickness so when the door is fitted, there should be a slight gap on the hinge which avoids stressing the hinge and screws holding it.

Do the test cut running along the outer edge of the workpiece first so it is cut away cleanly, then move inwards removing the rest of the waste. Unplunge and switch off and withdraw the router.

Hinge fitting

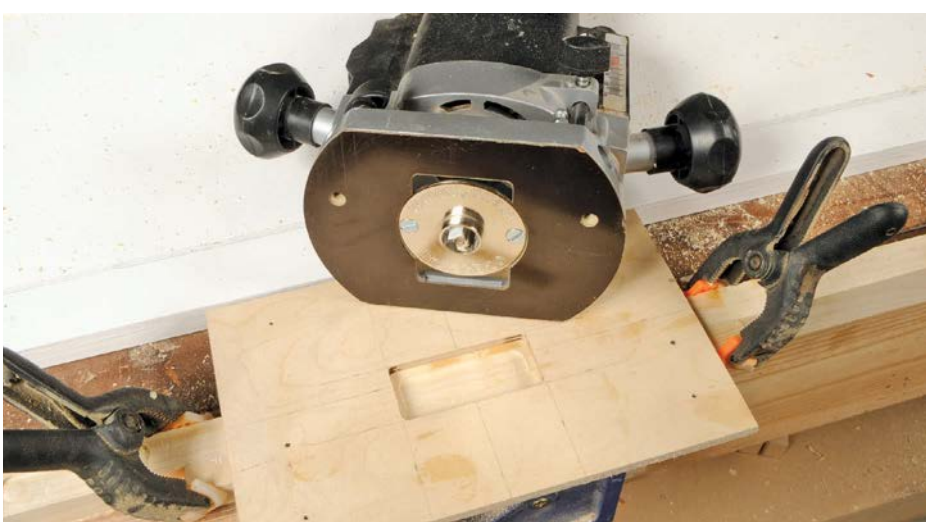
Use a sharp chisel to square out the corners of the recess if it doesn't go right across door width. Clean the base of the recess with the chisel in the corners and try a hinge for fit. If it isn't quite right you may need to adjust the jig or move the fence fractionally.

Now you can proceed to make all your hinge cutouts, which becomes a quick and easy process. In a piece of furniture your jig may limit how close to the top or bottom of a door opening you can place the router. If you are working on a larger scale with room doors you will either need to move the fence across to accommodate the thickness of the architrave bearing in mind it probably will be an awkward moulded shape, or remove the architrave for the duration of machining, which may not be as bad as it sounds if it is just held with a few nails. ■

Fix the jig board down, in this case pinned to the edge of the workbench and machine out the jig opening using a 6.4mm straight cutter and fence making sure you cut the edge furthest away from the fence so any deviation in the cut line goes into the centre waste area

Pin or screw a fillet to the underside in the position where the jig needs to be width wise against the door edge. This can be adjusted later if necessary

Place the unfolded hinge under the router depth stop once the recessing cutter and guidebush has been fitted. This gives the exact hinge depth cut needed but it pays to add a little more so the door closes neatly without too much of a gap between door and stile



Do a test cut first.It will be quite shallow but a very consistent depth of cut. Note the clamps used to hold the jig in the chosen position

The last act is squaring out the recess with a sharp chisel and testing the fit of the hinge. The jig can be adjusted but it may be enough to use the chisel to finish the job

KITTED OUT

Take a look at the tools, gadgets and gizmos that we think you will enjoy using in your workshop

Bahco handsaws

Bahco's Superior, ProfCut and PrizeCut saws set new standards in cutting performance, long-lasting blade sharpness and in their ability to cut many different materials in comfort and safety. Inspired and manufactured in Sweden they are available in a wide range of types, toothing and tooth pitch, with optional versions for coarse, medium, fine, precision and special cutting. Depending on the type of blade selected these new handsaws will cut all kinds of timber, wet or dry, including hardwood, softwood, tanalised wood, plywood and thin profiles.

Developed through Bahco's award-winning scientific Ergo™ process, the Superior's low friction blade has the very latest NXT hardpoint toothing. This technology builds on the success of the brand's XT toothing to achieve smoother, straighter cuts and a higher, flatter finish with less risk of deviation from the original line and no loss of speed.

Contact: www.bahco.com

Hultafors' new knives and hand axes for craftsmen and outdoor enthusiasts

With a selection of toughened, corrosion-proof heavy duty knives, safety knives, chisel knives and utility knives for general purpose tasks on site, there are also precision products for electricians, plumbers and painters.

The latest additions to the range are the Outdoor Knives for tougher tasks on-site or for those who need a cutting-edge companion out in the bush.

They're all are ergonomically designed with comfortable, secure grips and, made from the highest quality Japanese steel, which is honed and sharpened for durability, effectiveness and to withstand corrosion.

Contact: www.hultafors.co.uk

Workshop Essentials

Axminster has recently introduced some new sets to its range of workshop fixings. There are new sets of hose clamps, retaining clips, copper sealing and sump washers, flat washers, nylon lock nuts, assorted nails, washer sealing rings, rubber O-rings and assorted pop rivets. They are perfectly suited to the hobby workshop, the professional and especially the home; in fact anywhere a quick fix is needed quickly.

All Workshop Essentials come in a useful plastic organiser box 210 x 110 x 30mm. All fixings come with a handy selection of sizes. Prices range from £4.99 up to £11.99. You can also buy all 11 as a kit – Axminster's Mighty Maintenance Kit – at a special introductory price of £39.96.

Contact: www.axminster.co.uk

Mirka sands better!

A new improved backing paper with better sanding characteristics is being introduced by Mirka to its Jepuflex Plus and Avomax Plus abrasives.

The backing is an improved paper with better belt sanding characteristics including less deformation of product, better belt geometry, a more consistent sanding medium for a better surface finish, higher resistance to heat and humidity problems, improved belt sanding characteristics, increased anti-static properties and greater resistance to clogging and extended belt life.

Contact: www.mirka.com/uk

Bosch Connectivity – the future has arrived

The much-anticipated prospect of connectivity in power tools and measuring devices has become a solid reality with the arrival of several new Bosch Professional products on retailers' shelves. These tools are connected to your phone or tablet via Bluetooth – for sending, receiving and storage of information. A small Bosch connectivity module can be bought with the tool or purchased separately and simply slotted in later. Connected tools and their users communicate via the free downloadable Bosch Toolbox app, which accesses a growing range of time and effort-saving aids.

Planned key capabilities of the Bosch connectivity system include asset management and tool location, quick tool registration and personalised settings, fault alerts, condition and usage reports, and remote control. Importantly, the system has been designed to integrate new functionalities as they evolve.

As an added incentive, anyone buying one of these connected power tools complete with connectivity module before 30 June, 2017 can use the app to claim a versatile, stylish, ultra-modern Withings 'Activité Steel' activity tracker, worth over £135.

Contact: www.bosch-pt.com/gb

BESSEY adaptors

The BESSEY TW16AW19 workbench adapter has been on the market since 2016. It enables the use of BESSEY clamping elements of the TW16 and TWV16 series on workbenches with a hole diameter of 19mm (3/4in). BESSEY now also provides adapters for three further workbench hole systems – for diameters of 20 mm, 25.4 mm (1in) and 30 mm.

If you are still not be able to find a suitable size in this expanded range, the locking pin on the adapter can be removed and replaced with a self-made one. No matter which workbench adapter size is selected, all of them can be connected with the suitable BESSEY clamping elements in a few simple steps, and then inserted into the workbench without the need for tools.

BESSEY clamping elements of the TW16 series – with a fixed throat depth of 100mm – and the TWV16 series – with a variable throat depth of 30 to 150mm – can be used in conjunction with the workbench adapter.

The tools for accurate clamping on workbenches are available in three handle variants: a high-quality two-component plastic handle, T-handle or a lever handle.

The TW16AW workbench adapters cost between €11.30 and €14.60. Depending on the version, the prices for the suitable clamping elements vary between €34.60 and €78.10 (all prices MSRP excl. VAT).

Contact: www.bessey.de/en

Machine Mart's new Spring / Summer Catalogue

Whether it's keeping your workshop cool or getting your storage well organised, Machine Mart's new catalogue has all the Tools and Equipment you need this spring/summer. Featuring over 500 new products and massive price cuts, the 516-page Spring/Summer catalogue is a 'must have' for woodworking enthusiasts seeking a huge choice at unbeatable value.

Contact: machinemart.co.uk or visit your local store

Tip

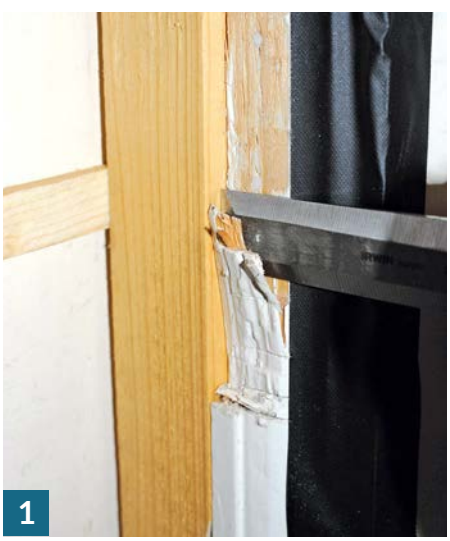
On unpainted wood the same procedure applies, although any short grain joins may be visible. You can bevel the ends of the patched area which can be less obvious. Make sure any glue is wiped away with a damp cloth so there are no dried glue marks left behind.

#@*&!%?! happens!

Repairing splits and breaks

Pieces of wood can and do get broken out, maybe because of a misplaced nail or they get damaged moving furniture around. Whatever the reason, patching is the answer

1 If the damage is too severe to simply glue and tape or pin back in place, chop out the offending area using a sharp chisel and a backing piece to prevent breakout. The tape in front shown here, is a line to chisel up to, so the surface will be pared flat ready to fit a patch.



1

2 Now cut a piece of wood to fit in the gap, making sure it is a neat fit at the ends and lies flat in the recess. Pinning it in place makes it easier to draw around. You will probably need to remove it and clamp in a vice to hand saw away the bulk of the waste.

2

3 Use a block plane and possibly a rebate plane as shown here, in order to trim the patch to the correct profile. It needs to be completely flush with its surroundings. Use medium abrasive paper to finish the job and then fill any gaps with woodfiller and paint with undercoat and topcoat to complete the repair!

3

Meet the contributors...

We put all of this month's professional and reader contributors here, so you know exactly who they are and what they do

Peter Wood

Peter has been a skilled green wood craftsperson making Windsor chairs and other creations for over 25 years. He demonstrates these skills around the country, gives lectures and runs hands-on workshops for all ages. He set up Greenwood Days in the National Forest as a centre to teach a range of traditional and contemporary crafts. He is also the current world champion pole-lathe turner!

Web: www.greenwooddays.co.uk

Amber Bailey

Amber is a marquetarian and surface design artist with a background in furniture restoration. She has trained in prestigious decorative art schools both sides of the English Channel and is now based in North Wales working for a furniture company using laser-cut marquetry.

Web: www.abmarquetry.com

Email: ab.marquetry@gmail.com

Gary Marshall

Gary has had a life-long interest in woodlands and the countryside. He trained in countryside management and subsequently ran a company working with the local County Councils and Unitary Authority and their Countryside and Rights of Way Teams, as well as a wide range of conservation organisations.

Simon Rodway

Simon also runs LineMine, a website with articles and online courses on drawing software. A new course, 'SketchUp for Woodworkers', is proving really popular.

Web: www.linemine.com/courses

Louise Biggs

Having completed her City and Guilds, Louise trained for a further four years at the London College of Furniture. She joined a London firm working for the top antique dealers and interior designers in London before starting her own business designing and making bespoke furniture and restoring furniture.

Web: www.anthemion-furniture.co.uk

Michael T Collins

British-born Michael has been working with wood off and on for 40 years. He moved to New York in 1996 and over the years, has made bespoke furniture, including clocks, inlay work, Adams fireplaces, book cases and reproduction furniture.

Web: www.sawdustandwoodchips.com

James Hatter

James's main interests include design and construction of a wide range of wood-based projects, and DIY, mainly for home and family use. Ash and oak are favourite timbers, which are included whenever possible in appropriate projects. He enjoys teaching, and working with his seven-year-old grandson Kieran, who often makes really good suggestions in design. James makes good use of woodworking machinery for enjoyment, and sometimes to overcome a lack of skill with hand tools.

Your face and details could appear here in our 'rogues gallery' if you write an article for the magazine, and you could be rewarded for your efforts too!

Editor **Anthony Bailey** Email: anthonyb@thegmcgroup.com, **Designer Jan Morgan,** Head of Woodworking Design **Oliver Prentice,** Senior Editorial Administrator **Karen Scott,** Illustrator **Simon Rodway** (www.linemine.com), **Chief Photographer Anthony Bailey,** Group Editor, Woodworking **Mark Baker,** Production Manager **Jim Bulley,** Production Controller **Amanda Allsopp** Email: repro@thegmcgroup.com, **Publisher Jonathan Grogan,** Advertising Sales Executive **Russell Higgins** Email: russellh@thegmcgroup.com, Marketing **Anne Guillot,** Subscriptions **Helen Johnson** Tel: 01273 402 873 Fax: 01273 478 606 Email: helenj@thegmcgroup.com
Printed in the UK by Stephens and George Print Group, Distributed by **Seymour Distribution Ltd** Tel: 020 7429 4000 **WOODWORKING CRAFTS (ISSN 2057-3456) is published every four weeks by GMC Publications Ltd, 86 High Street, Lewes, East Sussex, BN7 1XN**

SUBSCRIPTION RATES **(includes postage & packing)**

	UK	Europe	Rest of World
12 issues:	£51.00	£63.75	£71.40
24 issues:	£102.00	£127.50	£142.80

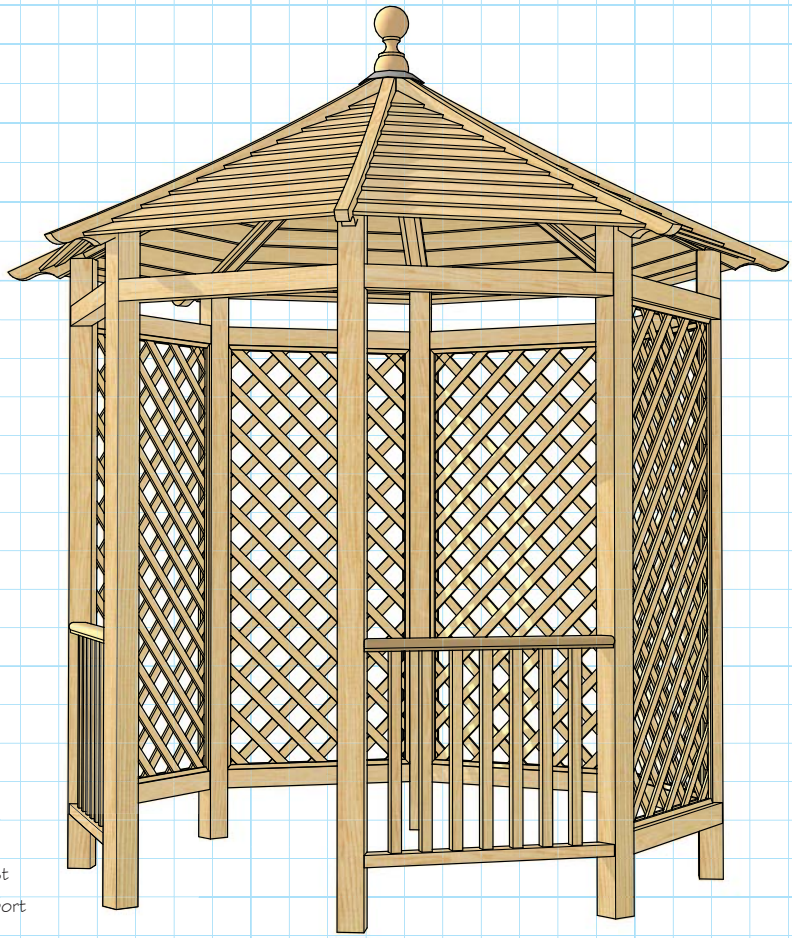
US customers should call the Subscription Department for subscription rates in USD ($).

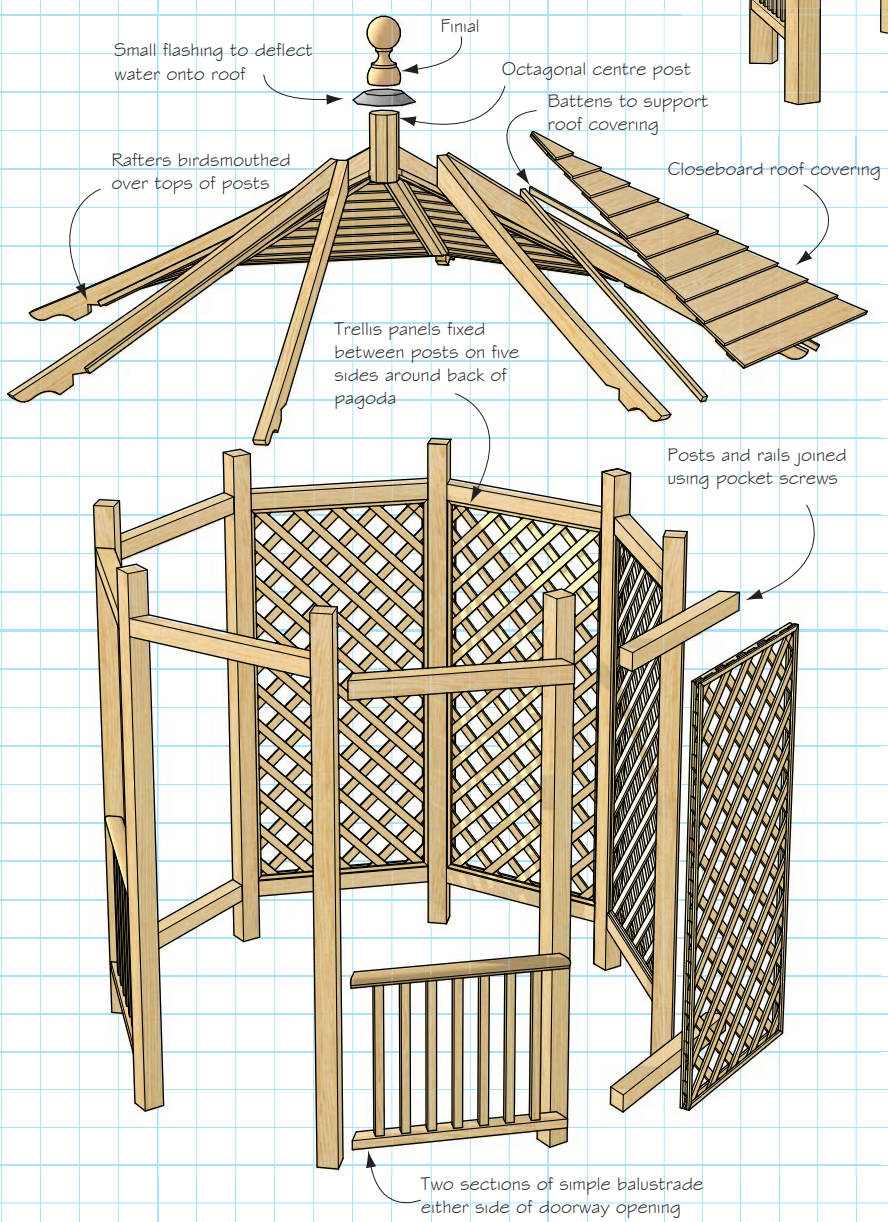
Cheques made payable to: GMC Publications Ltd.
Current subscribers will automatically receive a renewal notice (excludes direct debit subscribers). Post your order to: The Subscription Department, GMC Publications Ltd, 166 High Street, Lewes, East Sussex, BN7 1XU, UK. Tel: +44 (0)1273 488 005 Fax: +44 (0) 1273 402866 Email: pubs@thegmcgroup.com Web: www.thegmcgroup.com

PLANS 4 YOU

Pagoda

Simon Rodway looks east for his latest inspiration





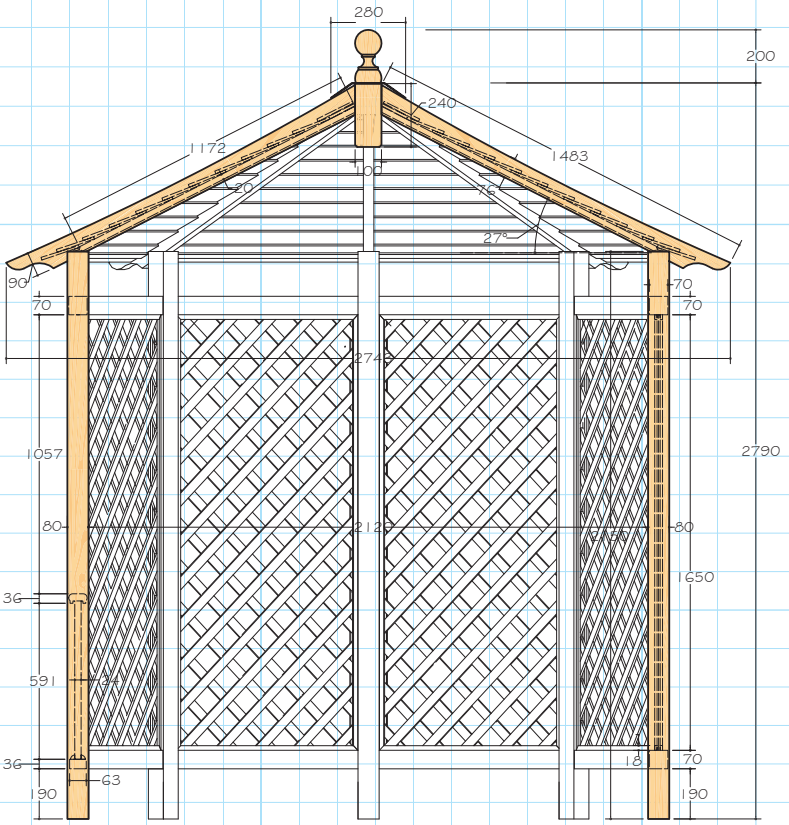
If you have ever spent an hour or two on a summer day sitting in one of those semi-enclosed Victorian garden buildings you will know how delightful they can be, especially on hot days when the sunlight plays through a trellis into the interior. For a while, the Victorians also loved all things Chinese and the garden pagoda is a descendant of this tradition.

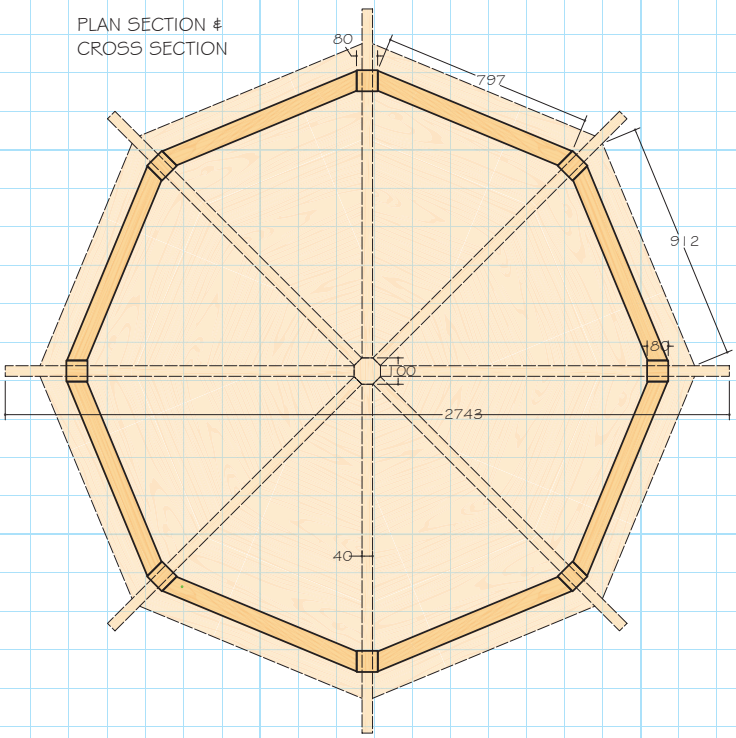
Of course, many of these structures had complex joinery and detailing, but hopefully this modern equivalent will achieve some of the same effects with a fraction of the expense and work. The main components are almost without exception readily available 'off the peg', even down to the shaped rafters which can be bought as pergola cross beams from suppliers like Wickes. You will probably, however, need to make the octagonal centre post from scratch. The whole thing is supported on 80mm square treated softwood posts anchored into 75mm steel anchors, either bolted to concrete pads or spiked into the earth. Concreting the

Cutting list

Posts	8 @ 2150 X 80 X 80
Rails	13 @ 797 X 70 X 80
Rafters	8 @ 1485 X 90 X 40
Centre post	1 @ 250 X 100 X 100
Roof support battens	16 @ 1170 X 20 X 20
Balustrade top	2 @ 795 X 65 X 36
Balustrade bottom	2 @ 795 X 63 X 36
Balusters	14 @ 600 X 24 X 24

Finial, feather edge roofing and trellis panel not shown on cutting list.





feet of posts into the ground is never recommended as they will rot out much more quickly and are also much harder to replace.

Some careful setting out of your octagon is obviously required, but these larger structures are much more forgiving of small inaccuracies than something like a toolbox, and there will be a bit of play in the tops of the posts as you cut and fix the top rails. These should be fixed once the posts are in place, as this will allow some adjustment, and will tighten the whole thing up. Note that these rails are slightly smaller in section than the posts, 70mm square, to allow for the greater width at the ends caused by the angled cuts.

The rafters have a shallow curve along the top edge to suggest a shaped roof, and once you have eight ready, cut four to length and angle the ends that meet the centre post. I would suggest provisionally fixing these to the centre post as opposite pairs and offering up the whole thing to the tops of the outer posts, marking the positions of the birdsmouth cuts once you are happy with the way it all looks, and with the octagonal post centred. Break the whole thing down again, cut the birdsmouths and re-fix properly, adding the other intermediate rafters once it is all in place.

The next step is to infill between the rafters with a roof covering of your choice; I have suggested feather edge boards which can look great, both as cladding or on a garden building roof. It is relatively cheap and easy to work, although a bit prone to warping, plus it comes ready treated against the elements, but there are obviously other alternatives. The boards need to be supported at the ends on battens fixed to the sides of the rafters, and allow a decent overlap as this will help to prevent warping and make the pagoda a bit drier as well. Before fixing the last section, put a small piece of circular or octagonal flashing between the centre post and the finial, to help shed water onto the roof and protect the post.

Finally, there are the infill trellis panels, bottom rail supports, and simple balustrade at the front to put in place. Trellis panels come in a very large variety of sizes and types, and it might be a good idea to source them at the start of the project, as you may need to adjust the spacing between the posts to accommodate them, or add spacers on the sides. This isn't a problem with the simple balustrade which uses a standard handrail profile along the top with square section balusters as infill. ■

Up on the roof

Master thatcher Kevin Hammond scaled his first roof at the age of 16 and he hasn't looked down since

PHOTOGRAPHS BY ??

Washing cars, mowing lawns, stacking supermarket shelves – Saturday jobs can be a transitional affair. But sometimes an opportunity presents itself that's too enticing to miss and too good to leave behind. Such was the case with Hampshire-based Kevin Hammond. He was only 14 when he was offered a weekend job by a family friend who, at the time, was working for a local Master Thatcher. 'I was only passing them up bundles of straw and tidying up the site, but I enjoyed being out in the countryside.'

Then, when he needed to organise a fortnight's work experience, Kevin arranged to spend the time with the same Master Thatcher, and a promise of a job when he finished school followed. 'It was a nice compliment,' he recalls. After accepting the job, he went on to complete a rigorous five-year apprenticeship, before working alongside other Master Thatchers around the south coast to gain further knowledge and experience. Kevin set up his own company in 2011, worked to establish his reputation and more recently has been able to recruit his first apprentice. And he's still only 31.

One of around 900 Master Thatchers in the UK, according to the Thatch Advice Centre, Kevin works across the New Forest, taking in Hampshire, Dorset and Wiltshire and, arguably, some of the most picturesque villages in the country. The thatched cottages nestled within these villages hold significant historical value and while a newly thatched cottage is stunning to look at, thatching is no easy task.

It's tough, physical work that demands a raft of knowledge, a wide skillset, meticulous attention to detail, planning, patience and, of course, a head for heights – in all weathers.

'Working outside all year round, the weather can disrupt us at times. Any snow stops work completely, but luckily, this doesn't happen too regularly down here in the south. High winds, lightning and torrential rain are a more regular disruption, especially when working from ladders.'

A multi-extension 1990s building in Lyndhurst, Hampshire. An example of a water reed thatch that has a lifespan of 30 to 35 years

A B&B in New Milton, Hampshire. It has a block ridge with straw animals – a squirrel, pheasant and an owl

Fixing the hazel spars in place

Nonetheless, together with his 23-year-old apprentice Scott, Kevin takes on a variety of projects, including rethatches, ridges, redresses and small repairs.

The thatching business

As well as cottages, his expertise includes listed buildings, public houses, porches, gazebos, cob walls, new-build properties and extensions. In addition, he has vast experience in both traditional and modern thatching methods and working with old and new thatching materials.

The 'old' is wheat reed, which is also known as combed wheat reed or wheat straw. It has a more rounded appearance and has been used as a thatching material for centuries. The 'new', which has been used for decades in certain regions of country, is water reed. This tends to be straighter in appearance, though it can be manipulated to have a softer effect, and it is also longer lasting and more durable. ➤

The raw materials being kept dry under cover

Total re-thatch – This cottage in Stockbridge, Hampshire has been re-thatched in traditional wheat reed and finished in a flush ridge. Top: Before work began; Above: work in progress; Right: the end result. The main coat work will last for at least 20-25 years, but would require some attention to the ridge in 10 years or so

Kevin uses local reed dealers for his materials, but the producers are from further afield. 'Water reed is really only from abroad now,' he says. 'Unfortunately, these days not enough water reed is produced in this country to meet the demand. Norfolk reed is still supplied to thatchers, however its availability is limited, and it is usually only supplied for use in and around Norfolk. It's more likely to be from Ukraine, Turkey, Romania, France and even China.

'There are farmers near me who grow wheat reed, but there's not a lot of land in this area, so they can't grow enough of it, whereas over in Devon and Somerset they're able to grow it in the quantity required to keep a lot of thatchers supplied all year round. The supplier I use for most of my thatching materials is a family-run business in Devon.'

Other skilled craftsmen are also required for Kevin's thatching materials. 'All the spars I use are traditional hazel wood and are made locally, by a hurdle maker. They provide the lovely crisscross pattern on the ridge and, sometimes, are used decoratively around the eves. There are plastic spars available, but I don't like or recommend them.'

The main difference between the wheat reed and water reed is longevity. A wheat reed thatch has an average lifespan of between 20 and 25 years while a water reed version can, in some cases last 30 to 40 years.

'Most listed buildings are thatched in wheat reed and would therefore need to be replaced with the same material. Planning permission would need to be given by the local authorities to change the material used on the main body of the thatch. Permission would also be required to change the type of ridge. For example, if the property is listed and already has a traditional flush ridge, then permission would be required to change it to an ornamental block ridge.

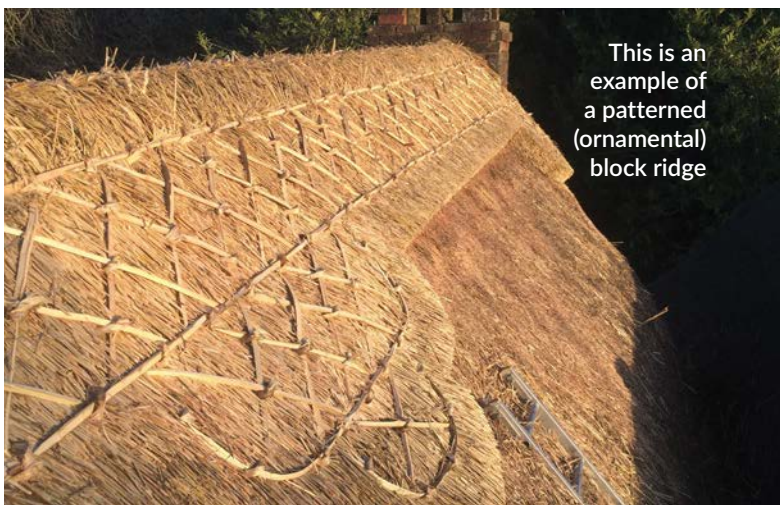
'A flush ridge, where the wheat reed is level with the main body of the thatch, is the most traditional of the two ridges. The block ridge is the more modern style and can be cut into a pattern giving a unique finish to the property.'

Ensuring top-quality work

A relatively new member of The Guild of Master Craftsmen, Kevin feels it offers him the chance to meet other skilled craftspeople. 'I might go to a meeting and meet a cobb specialist, which would be helpful if I were working on a property with a cobb wall or house, or I'd be able to find a craftsman who specialises in old buildings made of oak which would be useful if a client wanted a thatched oak extension.' It's also reassuring to know that fellow members meet The Guild's high standards.

For his part, Kevin will always go the extra mile to ensure his work is second to none and customers can be assured of a top-quality thatched roof. 'You have to cover the ridge with netting, but the coat work of a water-reed thatch could

Kevin Hammond working on the roof apex



This is an example of a patterned (ornamental) block ridge

Spreading the word at a public event

be left un-netted.' However, he recommends covering the entire roof, even when using water reed, to protect the thatch from rodent and bird damage. 'A customer contacted me recently after noticing damage to her thatch. It had been caused by a squirrel who had run along the water reed and, because it didn't have any netting covering the coat work, he'd been able to scratch through and dug about six divots in the roof!'

The risk of fire is also vastly diminished with the advent of new materials and applications. 'The new-build properties are now designed to protect the main structure of a building if a fire occurs to a thatched roof. One of these systems is the "Dorset Model". It has been developed by local authorities across the county and is a set of guidelines for extending or constructing a thatched roof building. Along with some of the other models available, including the Thatching Advisory Service's 'Thatch Fireboard System', it provides more time to save residents and possessions and to give the fire service the best chance of saving the main roof structure.'

During a rethatch Kevin also checks battens and rafters for woodworm and inspects the existing brickwork of the chimney stacks. 'After removing the old thatch, it's essential to inspect the chimneys. It's one of the only opportunities to see this lower section as it's usually covered. If the chimney has damage to it, or needs re-pointing, it must be repaired.'

Kevin advises that chimneys, including the pot, should be at least 1.8m above the height of the ridge and urges caution when installing wood burners with chimneys designed for an open grate and warns against using wood from unknown sources. 'Dry, seasoned wood is the best. And sweep the chimney at least once a year, twice if you use it regularly.'

So, does Kevin follow his own advice? He would, but he's not yet had the opportunity to live in a thatched property. 'I hope to buy a cottage in the future, most likely a project that requires restoration and some TLC!' ■

For more information about The Guild of Mastercraftsmen visit: www.guildmc.com

Work smarter

A wide paring chisel makes smoother cuts

Use the right tools

We've all struggled with a job and wished we had a better way of doing it – so what is the right tool for the job?

There is an old adage that you should always use the biggest tool for the job. There is some truth to this, anything too small or underequipped won't cope and make the job harder and less precise as well. An example would be using the ubiquitous No.4 smoothing plane to try and level the edge of a long board when you actually need a No.5 jack plane or even larger. The bigger tool has a longer base so the chance of reducing undulations from end to end is much higher. The additional mass of the plane means that it will travel more smoothly with each stroke rather than the stuttering performance of a smaller lighter plane.

Tip: *Empty out all your tools, sort through them, discard any unusable ones and re-store the ones worth saving.*

Hammers

Using a small hammer on a big nail is unproductive, the head can't give a big enough blow and can skate off the head of the nail, but using a big hammer on a small nail seems like overkill. However the heavier head can deliver more kinetic energy in fewer blows but then we worry about the risk to our fingers and thumb of course. A simple answer is to grip the shank of the nail with a pair of pliers so it is perpendicular and our fingers are not at risk. Once the nail is part embedded the pliers are taken away so the hammer can complete the job. The hammer should not be used to hit the nail head flush in the wood as it will dent the wood fibres. Instead use the correct size flat-head punch to set the nail in flush or deeper if filling is needed to blend with the wood.

Grip the pin or nail and save your fingers!

Sawing

Sawing is a particularly good example, nowadays most big saws are hardpoint handsaws. They come in several different types for board cutting, sawing solid wood and a coarser grade still. They are relatively cheap and disposable because they cannot be resharpened. However, if you are going to do small cuts or joint work, a smaller hardpoint tenon saw won't give very good results because it isn't as precisely made as a traditional tenon saw which will have slightly different teeth and a narrower 'kerf' – the slot it cuts in the wood. For this sort of work you need to spend more money and buy a really decent saw and look after it so it stays sharp and undamaged.

A traditional tenon saw will give very precise fine cuts

A hardpoint saw is quick and reasonably accurate

Gouges and chisels

Gouges for carving or cabinetwork come in different patterns and radii, but you can't have endless variants of the same tool unless you have an open-ended budget. You do need to identify the most useful sizes to keep in stock as it can be quite difficult working with a small radius in a big opening and impossible if a gouge is too flat a sweep for tighter curves. Chisels need to cover a reasonable spread of sizes, often very wide paring chisels are missed out of a small set but the longer the cutting edge the more precise and clean the result will be, examples such as the long side of mortises or adjusting the faces of tenons.

Sometimes a fine tooth rasp is quicker and easier than trying to use a gouge

Marking and measuring

Marking and measuring present challenges as all good work depends on how well it has been laid out and marked in the first place. The average trysquare is frequently not square so you can't expect marking of joints to be accurate. You can test this by marking a line across a piece of wood using a trysquare then flip the trysquare and mark again. So long as your pencil lines are fine you should be able to tell if there is any deviation. The best recommendation is to buy an engineer's square as they are more precise than you will need and therefore reliable.

In all these examples a bit of thought is needed and maybe some expenditure to bring your toolkit up to standard but it does pay dividends! ■

READER GROUP TEST

PHOTOGRAPH BY GMC/ANTHONY BAILEY

Members of our very own Woodworker's Institute Forum put Colt drill bits through their paces

Colt drill bits

Colt Twinland Flute drill bits are available in a wide range of mainly metric sizes from ⅛in - £3.65 up to 16mm £32.20 inc VAT
Visit: www.tomaco.co.uk for more information

What the testers had to say

Graham Murdoch: Drilling a blind hole with the bench drill into oak to a depth of 69mm the Colt certainly did not overheat and gave a clean entry hole. Once I got the snatching under control by easing the pressure I found that the Colt gave a clean entry and exit hole.

Tony Hampshire: I didn't notice much change in speed, but I noticed significantly less resistance and a much cleaner drilling than my own bits, a pleasant experience.

PHOTOGRAPH COURTESY OF EUGENE GRIMLEY

Eugene Grimley was most concerned about its usability in woodturning

Steve Courtney: I didn't find any control improvements over a standard bit. The bit 'pulled' on softwood resulting in jamming. The Colt was faster but by about x3 rather than the x6 claimed. The exit holes were cleaner, this was the most impressive feature of the Colt bit. As a hobbyist I couldn't justify switching to these bits due to the cost.

Eugene Grimley: It was very quick – I was able to run my lathe at high speed and feed in the drill as fast as I could. There was heat but no burning and the exit hole was very clean even at high speed. Especially suitable for those who turn pens.

Brian Street: The Colt brad point bit easily cuts better than my existing drills, both entry and exit holes are very clean. I would have no problem recommending this product.

Ralph Brunjes: I found the Colt drill bit most definitely cuts quickly and cleanly but I would not say that it gave cleaner exit holes. The only problem that I have found was that it cut very quickly and I had to keep withdrawing the bit more often or it got clogged up very fast.

Oliver Cox: I did find that there was a small amount of grabbing from the bit as it was trying to cut so fast when using a cordless drill. It was good at expelling the chips.

I found there was no burning at all on soft and hard woods. ■

PHOTOGRAPH COURTESY OF STEVE COURTNEY

Steve Courtney gave the Colt bits a thorough testing

How our testers rated the product

How would you rate the product performance?	9/10
How would you rate the product ease of use?	9.4/10
How would you rate the product overall?	9.1/10

Editor's comment:

There wasn't room to include all the testers' careful observations unfortunately. They haven't all had the same experience depending on the material being drilled and the actual usage. What stands out from my own testing is the speed of drilling and lack of burning. These are made and priced more for professional use or very discerning users.

If you would like to be part of our panel of product testers, please go to our website www.woodworkersinsitute.com – and **SIGN UP NOW!**

Woodland ways

Wattle hurdles

Gathering suitable hazel wands

This month Gary Marshall gives an account of a productive time in the woods, overcoming hurdles and deciding wattle we do next?

It was early spring when a group of friends met in 40 Acre Wood. When I arrived the kettle was on the fire. It wasn't long before we were foraging for suitable hazel stems for our task for the day – hurdle making. Following my article on growing good quality hazel (*Corylus avellana*) in WWC 24, this was not the best quality hazel for the job. Some was overstood but most was a little on the slow-grown side, being overshadowed by dense chestnut (*Castanea sativa*) and oak (*Quercus robur*) canopy. Nevertheless there's always some usable material to be cut and sorted in a large wood.

Hurdle making

We'd read a bit about hurdle making and seen demonstrations at country fairs but didn't have a book between us on site! Having gathered much of our long, flexible stems for weaving – we sorted some of the stouter stem bottoms as stakes. Seven uprights were pointed, positioned and hammered in at regular intervals – we placed them about 38cm apart, in a very slight crescent shape. We remembered that when the hurdle was released from the ground the slight curve would flatten but add strength. If you're making a lot of hurdles, a wooden base can be used to support the stakes. Our ground was firm enough to ensure minimal movement in the stakes when weaving.

Next we tried weaving, quickly finding the degree of suppleness needed in the stems – anything less than springy will split, crack or snap, just where you don't want it to! First the horizontals were gently tapped into place – but even more effective was gently treading them down.

We tried another old skill with thicker but flexible long stems. Splitting them (with a sparhook or billhook) along their length, while steering the split and very gradually pulling around an upright – we used a sacrificial young tree. Tricky but fun to master. Split stems were woven in, generally facing the same way, to add variety and strength.

End turns were made every fourth or so horizontal in order to add pattern to the hurdle, to strengthen and to make use of our longest, best hazel. As we turned, we made a half twist round the end stakes. This technique took some time to perfect, although Robin was a bit of a natural. With stiffer stems we found that slightly crushing the fibres and/or warming the stems where they were to be turned really helped. We had many attempts before we 'mastered' this skill. Firm but gradual, avoiding over-twisting and guiding the stem round definitely worked best for us. Then it was time for lunch...

After lunch we finished our first hurdle and then we went into production with the next one. The title picture above shows a detail of the 'turn'. Despite our initial lack of experience and expertise we had a good go and were pleased with the results and, yes, we overcame many hurdles in the process! ■


Positioning the uprights


Upright stakes aligned on a slight curve


Beginning to weave the horizontals

PHOTOGRAPHS BY GARY MARSHALL


Softening the fibres before twisting a turn


Work in progress on the first hurdle


The first hurdle complete and still in the ground


Failing to twist and turn


Our twists and turns got better with practice


Alec is pleased with the result


A pen made up of four hurdles

Tips for hurdle making

- If your stakes start to fan apart, close in or weave out of line, correct them as you go, sometimes they co-operate by themselves and weave back into line with the next horizontal.
- Don't panic.
- Choose straight stakes and rid them of any snags. Enjoy.

Tools used: billhooks, sledge or club hammers, bowsaw/panel saw but most of all eyes, hands and enthusiasm!

hand tools and wood chisels specialist

Ashley Iles - Henry Taylor - Robert Sorby - Joseph Marples
Veritas - Clifton - Thomas Flinn - Morris - Ice Bear...

All items in stock, ready for dispatch..
*unless marked otherwise — *all prices inclusive of VAT*

Tool Nut .co.uk

Henry Taylor 'Diamic' brand woodturning tools have been produced in Sheffield by skilled craftsmen, from the finest steel for more than one hundred and fifty years.

Kevlar Gloves (pair)
for only **£5.00**

Henry Taylor Decorating Elf Texturing Tool

Braces (50+ types)
from only **£12.00**

Natural Leather Chisel Rolls
10 pockets: **£17.50**
12 pockets: **£20.95**

Veritas Router
from only **£103.95**

Multi-Profile Japanese Sharpening Stones
280g: £15.00
1000g: £15.00
3000g: £17.00

Joseph Marples 'Trial 1' Mortice Gauge
for only **£45.00**

Henry Taylor 6-Piece Starters Carving Tool Set
for only **£79.99**

Veritas Plough Plane
from only **£138.95**

Veritas Scrub Plane
for only **£84.99**

Large Coffin Shaped Mallets
only **£35.00**

Veritas Apron Plane
£72.95

Veritas DX60 Plane
from only **£144.00**

Veritas Miniatures

Order online today at
www.toolnut.co.uk

saws

SHARPENING

Plane & Spokeshave Blades / Parts

punches

Wooden Trestles
x1 **£44.00** each
x2 **£41.00** each
x3-9 **£39.95** each

OVER 90 DIFFERENT CARVING TOOLS

OVER 25 DIFFERENT CHISELS

Order online today at www.toolnut.co.uk

GENERAL FINISHES
Chalk paints and stains

The award-winning manufacturer has a huge range of topcoats and paints. It has just released some exciting new additions that we were keen to try out for ourselves

Chalk style paint

General Finishes' Chalk Style paints now include a Bone White and Slate Grey plus a Flat Out Flat topcoat designed to seal and protect everything underneath without changing the apparent level of finish.

The paints need plenty of stirring because of the amount of solids, so their wooden stirring sticks are ideal for this. The paint goes on superbly well using the foam applicators and one coat is usually enough, which makes it more economical to use. A feature of this company's products is the way they can be mixed and matched and used for successive coats to give varying effects. ➤

General Finishes has an extensive range of products

Chalk style paint has a thick consistency

It covers in one coat

Using the snappy applicator

Wood stain

These are water based so there is no extended drying time or incompatibility with other General Finishes products and they are safe to use, of course. The two in question are Weathered Gray and Expresso. I was sceptical beforehand about how effective these water based stains could be, but a good even coat of Expresso on some ply boxing gave a quick, even and very convincing level of coverage in one coat. It still allowed some grain to show but had obliterated the bare featureless surface underneath.

Application

Jen Poly-Brush

The Jen Poly-Brush comes in various widths from 26mm wide up to 104mm wide and gives really smooth even results quickly without any over spray spotting or lost bristles, both of which can be a problem with brushes.

Snappy applicator and Nanoflock smoother

These are two new solid foam applicator blocks which feature different facings. The Snappy is for more general application of thick finishes, while the Nanoflock is intended for light top coating and suchlike. I tried the Snappy and yes it works, but I do feel once you start a paint stroke you are rather committed until you reach the end of the stroke, whereas the Jen Poly-Brush can be touched down and lifted off at any point. The Nanoflock for fine work is good though, probably best used working against a gentle light source so you can check the quality of finish as you go.

The wood stain gives a pleasing effect

Verdict

You may feel these products are pricey but the quality is undeniable and they are relatively economical to use. I thoroughly recommend them if you want to give furniture and woodwork a complete and convincing makeover. ■

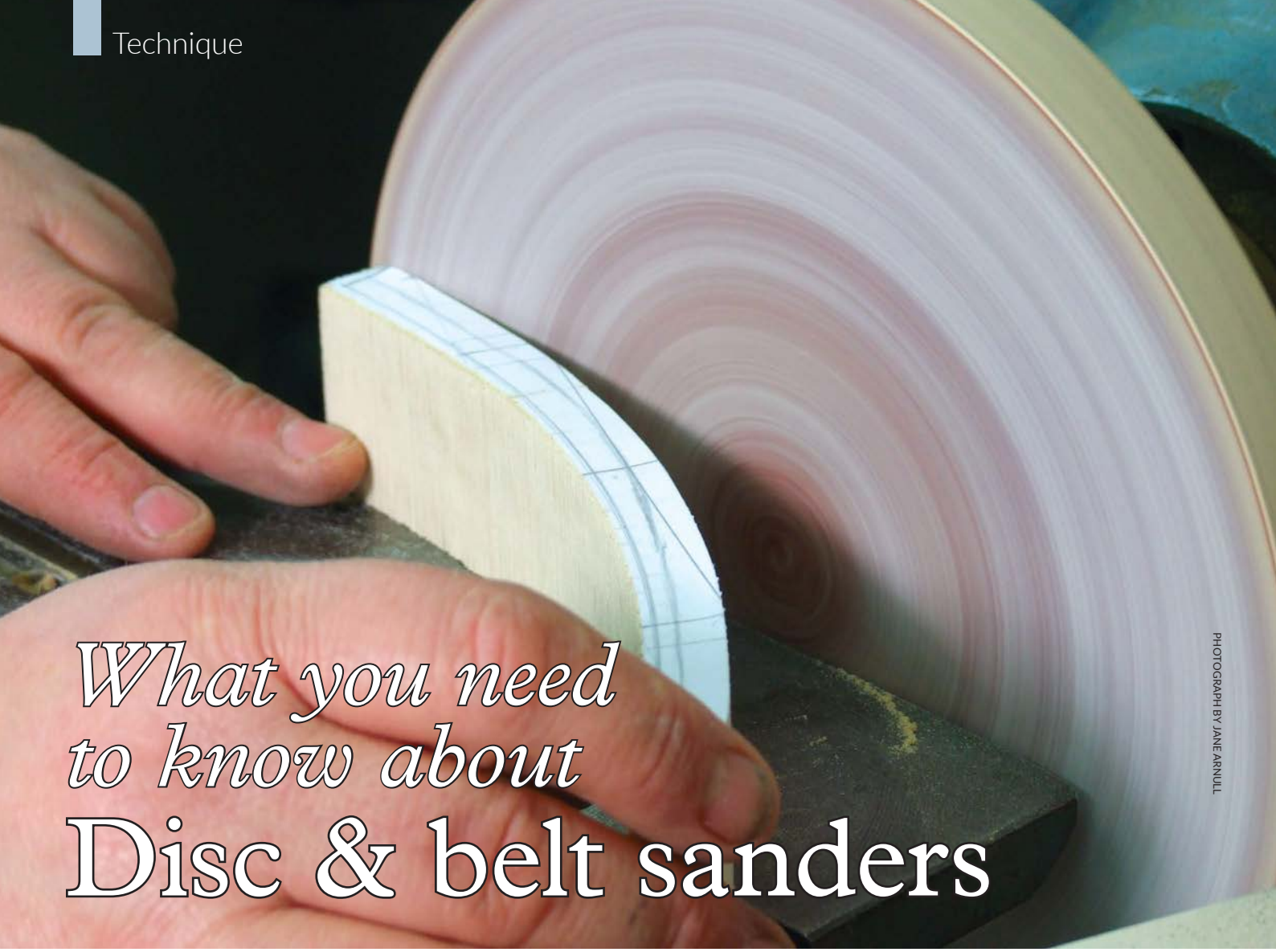
A range of colours to suit most requirements

The numbers

Chalk Style Paint
473ml/ USA Pint £17.30 – 946ml/ Quart £27.90

Wood Stain
473ml/USA Pint £15.20/ 946ml/ Quart £21.95

Visit: www.generalfinishes.co.uk online store for complete product range



PHOTOGRAPH BY JANE ARNULL

What you need to know about Disc & belt sanders

Using a static sander needs grit and determination – we have both!

Once you have sawn and planed your wood there comes joint cutting and shaping which is much more easily done if you have a static disc or belt sander. A disc sander can effectively cut as well as sand to shape because relatively small areas are presented to the disc and with a coarse 80 grit disc in good condition, creating curves, bevels etc is stunningly quick. A belt sander is slower because it is used more for long grain edges but it can 'true up' and flatten a surface before using an orbital sander and the 'nose' at the front is excellent for concave shapes.

Static disc sanders

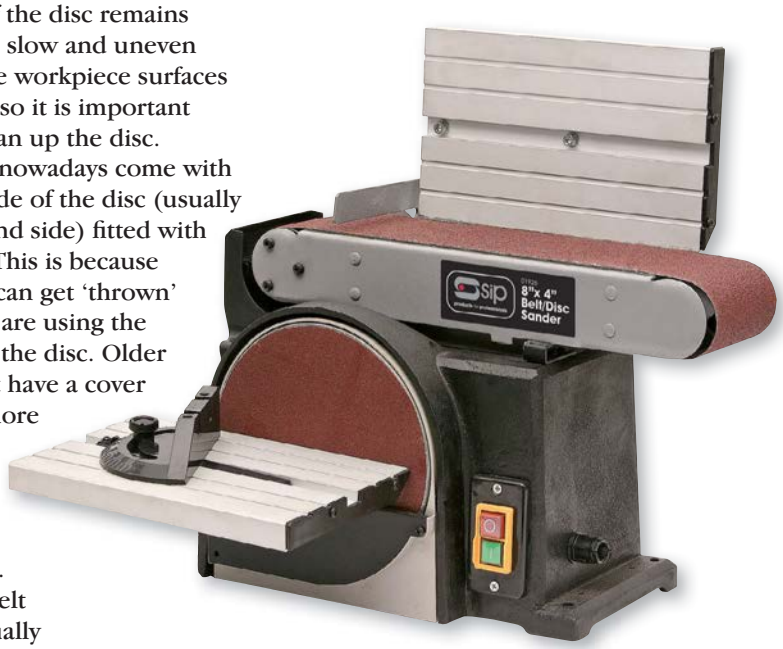
You can extend the life of a sanding disc by bandsawing most waste away before presenting the workpiece to the disc so only a smaller amount needs to be sanded.

You can buy a special soft rubber compound block for unclogging the disc surface or use a piece of garden hose and apply it to the running disc. If the disc remains clogged it gives slow and uneven sanding and the workpiece surfaces become burnt, so it is important to regularly clean up the disc.

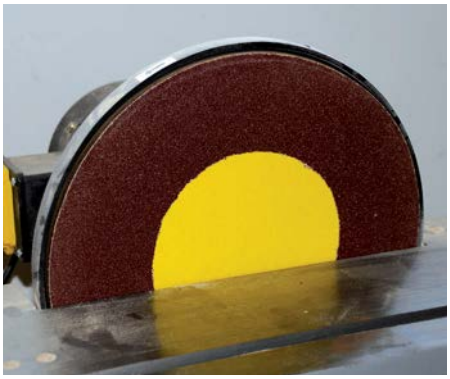
Disc sanders nowadays come with the 'upward' side of the disc (usually on the right hand side) fitted with a metal cover. This is because the workpiece can get 'thrown' upwards if you are using the entire width of the disc. Older machines don't have a cover which allows more complex shapes to sit closer to the disc during sanding.

Fixed static belt sanders are usually

A small combined belt and disc sander complete with fences and mitre protractor

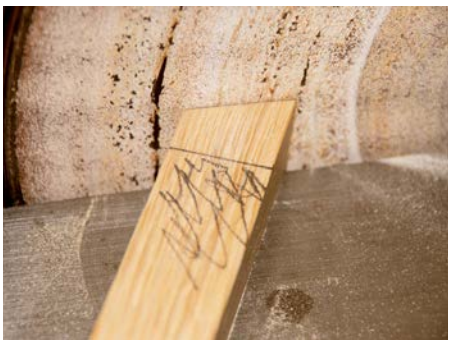


PHOTOGRAPHS BY GMC/ANTHONY BAILEY UNLESS OTHERWISE STATED



You can cut and fit two different grit grades together so you can use which ever is most suitable

Older machines carry a risk of the workpiece kicking upwards if you use the entire width



This disc has become clogged and will give a very scorched uneven finish

Sanding curves is typical disc sander work, you can create very even radii

Modern disc sanders have the 'upwards' side covered for safer usage

part of a machine with a disc sander as well, it may be smaller than a disc machine on its own so you need to decide if you want to have both in one machine.

Static belt sanders

A belt sander offers different sanding options and will normally have a fence alongside and one across the sanding bed. These will keep the workpiece perpendicular to the belt and safer to use as well.

Belts and discs are 'open coat' which means they clog less than hand-applied abrasives. A coarser grit works best since the machine runs fast tending to cancel out a certain level of scratch marks. 80 grit is probably favourite unless you are sanding small objects in which case 120 grit is a better option.

Belt are easily replaced as they are held in place by a spring tension mechanism which is easy to release. Discs are more difficult to change because the sanding table in front restricts access, often it is easier to swing the table downwards so the gap in front of the disc increases.

The two disc mounting options are self adhesive which lie very flat but are hard to remove cleanly, a woodturner's scraper is a useful wayto quickly scrape the aluminium backing disc clean. The other type – hook and loop – are thicker and pressure can dent them slightly. They are also difficult to attach and release as they grip suddenly in the wrong position. A thin piece of worktop laminate works well as a 'release' divider pushed down between the hook and loop material.

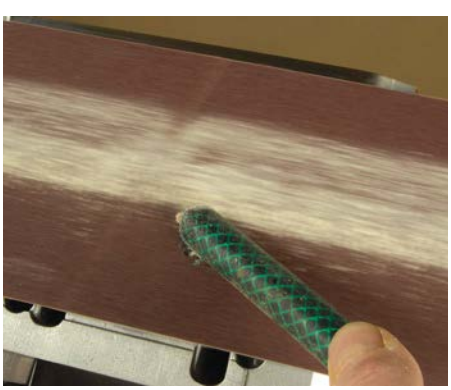
Personal safety

Sanders can be quite aggressive when you least expect it, small objects should be held firmly in a device or jig so your fingers are nowhere near the abrasive.

Extraction is a must as sanding of any kind produces the finest, most dangerous dust particles. Ensure the extraction is working well and if necessary make up a hood to partially enclose the sander to help the extraction work. You must wear a good quality FFP2 category dust mask or a powered respirator. ■

If you don't have a mitre fence with your sander you can make up your own

A belt sander has a rounded front end perfect for sanding internal curves



A piece of garden hosepipe being used to drag wood dust off a moving belt

LOVED IN THE INDUSTRY, CHOSEN BY PROFESSIONALS

minimax

EVERYTHING YOU NEED TO DELIVER!

S 45 n
A small Band Saw with great capabilities that is perfect for either the joinery workshop, schools, furniture restoration or renovation

SC 3 CLASS
Robust, professional and a precise circular saw

ME 25
An innovative professional edgebander for everyday workshops

FS 41 elite s
Heavy duty, compact and created to meet the demands of workshop

T 55 W elite s
A Spindle Moulder with great versatility for many tasks

ECO 300 D
An efficient low cost dust extractor

scmgroup uk
Blenheim House, Camberley Road, Bulwell, Nottingham NG6 8UW
Tel: 0115 9770044 - scmgroupuk@scmgroup.com - www.scmgroup-uk.com

minimax

Tool restoration – spirit level

Amber Bailey restores a delightful antique spirit level back to its former glory

Any woodworker will testify that it is far too easy to spend a vast fortune on tools. When forking out on brand new equipment, you cannot always guarantee that you are getting quality items for your money. Sometimes your best bet is to pick up second-hand tools from a local car boot sale or junk shop. The majority of antique tools were designed to be sturdy and built to last, proving superior to many of their contemporary counterparts. Unfortunately there is always a danger that if a tool is left lying around the workshop gathering dust for 50 years, it will start to show its age but with a little bit of TLC they can be brought back up to a showroom finish.

This rather worn-out looking antique spirit level in oak (*Quercus robur*) and brass, is believed to have been made by William Marples & Sons of Sheffield. The company operated throughout the 19th and 20th centuries before coming into the ownership of Irwin Industrial Tool Co. in 2008.

1 Tools left lying around in workshops are subjected to all sorts of polish and chemicals. With fine grade wire wool doused in wax remover, I gently rubbed along the grain of the wood until all dirt and remains of finish were removed.

With a serious build up of matter, I decided to sand back with abrasive paper wrapped around a block. This was a very intrusive step that could have risked the natural patina of age. On antique objects, sometimes 'less is more', patina can appear very charming rather than restoring right back to fresh wood.

2 The brass plate surrounding the vial had become tarnished from oxygen exposure, so I cleaned it with a combination of fine wire wool and metal polish. I followed along the length of the metal, making sure not to alternate direction, any alteration would create scratch marks.

For particularly bad damage, a coarse metal abrasive may be required. Coarse abrasives will leave scratch marks, which will then need removing with finer abrasives.

To prevent further tarnishing, the metal was coated with a layer of lacquer, avoiding oxidation.

3 Once the level was cleaned, a new protective finish could be reapplied. A soft finish such as linseed oil or wax will feel nice to touch and not chip from use in the same way as a lacquer finish may do.

Finally I applied wax with cotton cloth before buffing up with a fresh piece, the choice of wax colour will depend on the wood type. Renaissance (micro-crystalline) wax is an ideal protective layer for the brass plate. ■

To check the accuracy of a spirit level:

1. Position the level on a flat surface.
2. Mark the point of one end of the level and the centre of the vial.
3. Take note of the bubble's alignment.
4. Rotate the level 180 degrees to the previous reference marks.
5. If the level is accurate, the bubble will be in the same place as before.

PHOTOGRAPHS COURTESY OF AMBER BAILEY

The brass has been proudly stamped with a 'British Made' mark

Fitting out a WORKSHOP

A perfect, well-organised space in which to work is ever woodworker's dream. Here we show you how to make it a reality

The average workshop – be it a garage or shed – is usually quite small, so ingenious solutions are called for. The problem is that as soon as you organise storage properly, it takes up more room than when everything is piled in a heap! There is an adage that if the machines take up too much room, get rid of the machines. You can't quite do that but it is necessary to make some hard decisions about what you actually need, as opposed to what you have. The big essential bits of kit determine everything else around them. So maybe timber needs to be stored in the roof space or a separate weather-tight shelter outside. Are you working in a space with bare brick and no insulation? Lining a workshop out and creating a comfortable pleasant environment forces you to look at what you need to put back in that space in order to work effectively. Sometimes hard choices are needed...

Fitting out

So maybe the first step is to fit out the building properly. A typical method is to line out with builder's polythene sheet and then a layer of polyurethane insulation board behind walls, ceiling and floor, set between battens and then board over everything. This can be OSB (oriented strand board) or ply on wall and ceiling and moisture resistant flooring chipboard on the floor area, which locks together to form a good continuous surface, capable of withstanding heavy loads and keeping your feet away from the cold underneath.

An advantage of lining out is that you now have continuous flat surfaces which you can fix things to. Storage drawers are extremely handy and the top surface can be used for things like a compound mitre saw, pillar drill or sharpening station.

Any area of wall space is valuable although you need some windows so you don't just rely on artificial light. Magnetic racks and custom-made toolboards keep things nicely organised and make selecting tools easy while keeping them safe and you feeling proud about your workshop setup.

A magnetic toolbar is a cinch to use as most tools are made of steel. The toolbars usually come in packs of three

Choosing machines

Choosing which machines is always difficult – they cost money and in a small space you can't have everything you want. A bandsaw seems to be number one on most woodworker's lists and it has a small footprint which is useful. It does need to be good quality and have decent blades available, so you can get accurate cuts if you don't have a table saw as well. A pillar drill also has a small footprint and can sit on a bench or cupboard. A good capacity compound mitre saw will do a lot of accurate ninety degree and forty five degree mitre cuts, but it does need plenty of room for cross-cutting long timber. A small cabinet thicknesser is very handy and has a small footprint but again needs plenty of room to feed timber, so these last two machines may need to be movable or maybe you need access at the end of the workshop to feed timber through. Having access doors could be useful for sliding timber into roof storage racks, it may be possible to cut openings in the roof end to do this.

Electrics are an essential workshop feature. They need to be installed safely so it is best to employ a qualified electrician to do this. However you can work out a suitable layout for sockets and lights and fit conduit, metal clad sockets and enclosed striplights ready for the electrician to cable everything and also install a consumer unit to supply and protect the workshop electrics. ➤

If your workshop has a concrete floor the first step is to seal it against ingress of water using a tanking compound

The next step is builder's heavy duty polythene sheeting to give overall damp resistance

Now for polyurethane boards which are easy to cut and lay, giving good insulation underfoot. Then flooring chipboard is laid over the top and the edges sealed against the wall boards

If a workshop ceiling is high enough a dropdown supply avoids trailing leads on the floor

In a workshop situation, round conduit and metalclad sockets are the safest to use. Make sure you have plenty of sockets

A workshop needs its own supply installation with a consumer unit, which can be smaller than the one shown here

PHOTOGRAPHS BY GMC/ANTHONY BAILEY UNLESS OTHERWISE STATED

A look inside *Woodworking Crafts* contributor, James Hatter's workshop...

James Hatter lined his workshop with TGV (tongue, groove and vee) softwood and then screwed a framework to it

PHOTOGRAPHS BY JAMES HATTER

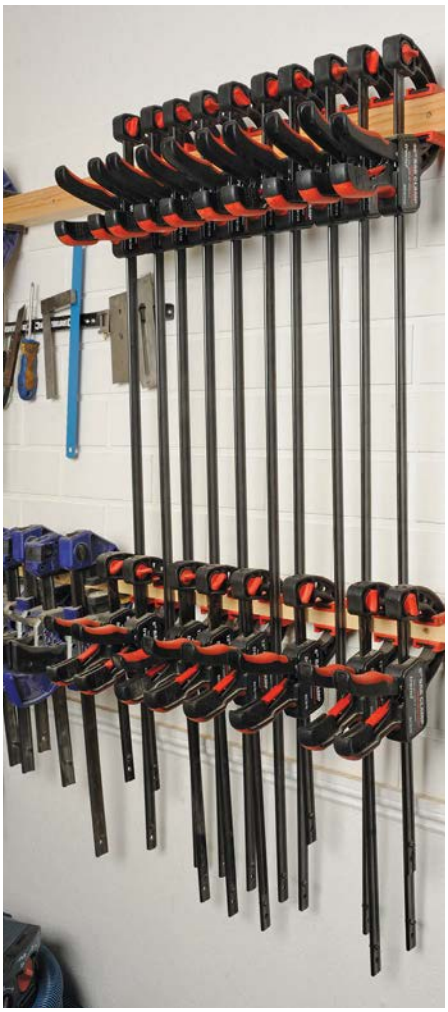
ABOVE: Next a set of drawer boxes constructed from ply with tongue and groove joints and mounted on easy runners

RIGHT: The drawers are variously compartmented, this one has a sliding tray for drill bits

ABOVE: James also made a compound mitre saw work station with additional work supports and mobile but lockable in place

RIGHT: A very smart looking result with a useful work surface on top and good window light

The saw board, again everything fitted neatly together and easy to lift off and replace each time they are used



Storage for quick clamps consists of just two bars with one row of clamp ends sitting between the clamps below them

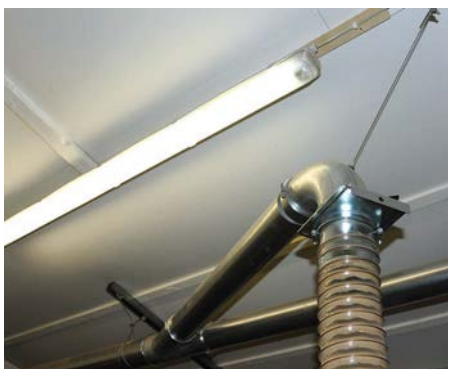
These lift off router cutter trays make storage and selection very easy and the cutters are safe from damage

Extraction

Extraction is essential but the requirements for planer thicknessers which produce chippings and compound mitre saws and disc sanders which produce dust are obviously different. In a small workshop you may need to settle for 65mm diameter pipework rather than the larger 100mm type. A twin motor drum extractor is very powerful and will sit under a workbench or even be installed in its own weatherproof cabinet outside. This will reduce the noise in the workshop but may annoy neighbours, although sound insulation helps. All machines except one (usually the bandsaw) need blastgates to ensure enough suction at the machine being used. Powertools extract better with a powertool auto extractor but that needs more space although it can be moved around.

Security

Last but not least is workshop security. This is not an easy one to resolve because a determined intruder will always find a way. Security lighting and padlocks can make it difficult for a burglar to be discreet and of course nowadays some homeowners install small CCTV systems in high-risk areas but these need to be linked to a recording device for evidence. Making a habit of locking up regularly is important and remember to lock garden gates as well. ■



Extraction pipes and enclosed strip lights complete a well set up, safe workshop

Here are some of the handtools located on a separate board next to the cutters, everything neat and easy to find

Ask the Experts


ANTHONY BAILEY
Editor,
Woodworking Crafts magazine


MARK BAKER
Group Editor,
GMC woodworking magazines

This is your chance to challenge our editors and for them to answer your comments and queries

"I've just acquired an old green DeWalt DW1150 planer thicknesser. I'm a metalworker by trade so I don't know a lot about this machine. The surfaces are rusty and the blades look rough and badly worn but it works after a fashion, quite powerful in fact. What do I need to do to get it running nicely?"
Dan Moger

PHOTOGRAPHS BY GMC/ANTHONY BAILEY

An old rather crusty machine which just needs some TLC to bring it back into service

Anthony replies: I owned one of these machines from new, many years ago, and apart from replacing the thicknesser drive belt nothing stopped it. I regularly fed it large lumps of wood including sawn 150 x 150mm wet oak posts which sprayed me with sap as they went through the thicknesser!

There are a number of steps you need to take to bring it back into proper service. You need to check the surfacer beds are level from end to end, a long accurate straight edge is the best way to check this. Next you need to buy a set of replacement blades, they cost around £20 plus P&P, the old ones sound as if they may be unfit to have resharpened. Now comes the tricky bit, removing the old blades. Use some WD40 or other thin lubricant to help release the bolts holding the blades. Use the correct size spanner and take care when trying to undo clockwise winding the bolts inwards, as the heads round over too easily. I have had to replace a couple in the past as a result of trying to get the old ones out.

Height setting the blades can be a pain but is worth doing properly so the blades 'pull over' by the same amount

Remove the blade clamping wedges, clear the slots and refit the wedges and the new blades. Trying to get the correct height setting from end to end is tricky. It needs to be done with the tables down, using a batten with two marks 3 – 4mm apart and pulling the cutterblock over by hand (power isolated of course) to check how far the batten moves. Turning the tiny grub screws in the wedges adjust the height, tighten the bolt gently at one end, then the other, repeat height and bolt adjustment until both ends are the same, then tighten firmly at one end and work along to the other end including releasing and retightening the other end bolt so the stresses are evened out.

The thicknesser bed is cast iron so it will rust; it needs to be scraped to get rid of the rust and then lubricated with hardening wax polish. If the thicknesser drive belt is damaged you can buy a spare and fit it quite easily.

You are ready to do some test planing both overhand first, then in thicknessing mode. So long as the surface planing is satisfactory you can then check the thicknesser is machining parallel by doing some passes and checking side-to-side thickness, if you turn the workpiece around it should not take off any more material. However, the thicknesser bed can go out of true, there is a chain link drive that can be adjusted although it is a bit awkward to get at.

It is well worth doing a proper overhaul, with care your machine should last for years to come!

Extra doors

I have a large pine cupboard with wide doors. I want to do an upcycling job on it, rather like some of the earlier projects in the magazine where they are repainted to look completely different. The doors are really too wide for my liking. Is there some way to split them and remake them so they can hinge off the centre as well as the outside of the cupboard as narrow doors?

Marge Cooper

Anthony replies: The answer is a definite yes although it does involve some artful woodwork to do it.

- You need to measure the width of each existing opening and divide in half. This will give you the widths of the four new narrow doors.
- Find some prepared pine of the right thickness for the door stiles where they will meet each other.
- Subtract the width of the new stiles from the top and bottom rails add an amount for a tongue to plug into the stiles and cut them squarely.
- The existing panels are also cut slightly wider to form a tongue which will sit in the groove that needs to be formed in each stile using a router.
- Now the stiles can be glued and clamped to the rails.
- Once the glue has set the doors need to be trimmed to fit and hinged, the outer doors can use their existing hinge recesses.

If you have the means to do this fine, otherwise perhaps a helpful woodworker can do this whole operation for you?

Above: A pine cupboard ripe for being given a complete makeover

Right: An example of reassembling a resized door, note how the rail tongue plugs into the stiles

The vice squad

This may seem like a silly question but do I need a vice to do woodworking? I can clamp things down on the bench in my shed which isn't very big, but if I fit a small vice they seem to stand up which gets in the way of the bench top. Bigger vices need fitting properly underneath, I'm not sure my bench top is strong enough and I don't want to cut or drill into it to bolt it in place.

Roger Newby

Anthony replies: This is an interesting point, I'm all for minimalism even if it is forced upon us. If you do need a vice you can bolt a small one to a length of 75 x 50 PAR softwood and clamp it to the bench top when you need it. It occurs to me that even simpler still is to fix a vertical board to the bench front and just clamp anything to it you are working on, no vice present at all!

Fitting a vice isn't straightforward and can cut in vital bench components

Sometimes just clamping workpieces vertically is enough to be able to work on them

STAR QUESTION PRIZE

The Tool Marketing Company, or TOMACO, as they are known, who sell a variety of tool brands, including COLT, Sharp Edge and Narex Tools, are pleased to be sponsoring the 'Ask the Experts' section in collaboration with GMC Publications. Each issue's 'Star Question Prize' will receive a Narex six-piece chisel set worth £79.95 and all other published questions will receive a 20mm half-round fine cut Narex rasp worth £20.95.
For more information see www.tomaco.co.uk

TOMACO THE TOOL MARKETING COMPANY

If you have anything to say, write to: The Editor, *Woodworking Crafts*, 86 High Street, Lewes, East Sussex BN7 1XN.
Alternatively, email: anthonyb@thegmcgroup.com

Through & half-blind dovetails

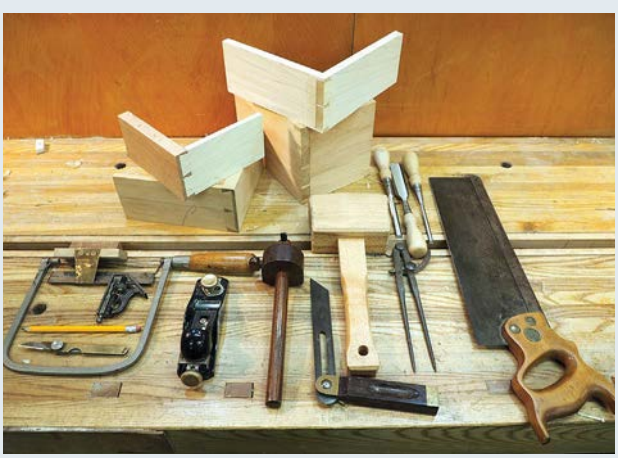
Michael T Collins shows how to make one of the oldest woodworking joints that cabinetmakers are still keen to master

The use of dovetails can be traced back millennia to the Egyptians and the ancient Chinese, who used them in their furniture. It is one of the strongest methods of joining two boards together at right angles.

If the appearance of dovetails in a piece is not important, then the through dovetail can be employed, which is the simplest method to master. The half-blind or lapped dovetail is used when one side (such as the face of a drawer), must be uninterrupted. In this article I will take you through the steps of creating beautiful and accurate through and half-blind/lapped dovetails, the two types common in drawer making. We will use traditional hand-tool methods.

Tools needed

- Bevel edged chisel 6mm and 19mm
- Mallet
- Dividers
- Cutting gauge
- Marking knife
- Bevel gauge or shop-made dovetail gauge
- Dovetail saw (rip set teeth)
- Coping saw
- Block plane



Pins or tails first?

There are two schools of thought regarding the cutting of dovetails: do you cut the pins or the tails first? In certain circumstances (such as secret-mitred dovetails), there is no option but to cut the pins first. But for the vast majority of dovetails I make, I cut tails first. I like to gang drawer sides together and cut tails simultaneously, which would be impossible to do if pins were cut first. For me, cutting tails first is a much more cost-effective and efficient method.

Method for cutting half-blind or lapped dovetails

Prepare the boards to final dimensions, pay particular attention to making the ends square. Mark the face side and edge. I typically make drawers with 19mm thick boards for the drawer face (the pin board) and 9.5mm for the drawer sides and back.

1 First decide on the length of the tails. As a general rule I make the tail's length three quarters of the pin board's thickness, so if the pin board is 19mm thick the tails would be about 15mm; this will ensure the joint has adequate strength and will

give a pleasing look when viewed from the side. With this setting, mark the location across the end grain of the drawer from the inside face.

2 With 15mm set on the cutting gauge, mark the tail board across all faces on the ends that will form the blind dovetail.

3 Now take the cutting gauge and set it to the thickness of the draw side 9.5mm (I actually add about 1mm to this measurement). This is achieved by hanging the cutter fully over the edge of the board and then take this setting and mark the distance on the inside of the draw front from the end grain.

Now to lay out the tails

4 First determine the half-pin width: this is a matter of personal choice and aesthetics. I learned to eyeball the size, and so for a 75mm high drawer, a 6.5mm half-pin is about right. Mark the half-pin on both ends of the tail board.

Now decide the number of tails you want. For illustration this drawer will have two evenly spaced tails.

Gang the sides together in the correct orientation.

To mark the tails, set a pair of dividers to half the distance between the two half pins plus a 'bit' (this can be 1.5mm or 3mm). If you are planning on cutting three or four tails, set the dividers to a third and a quarter the distance plus a 'bit'.

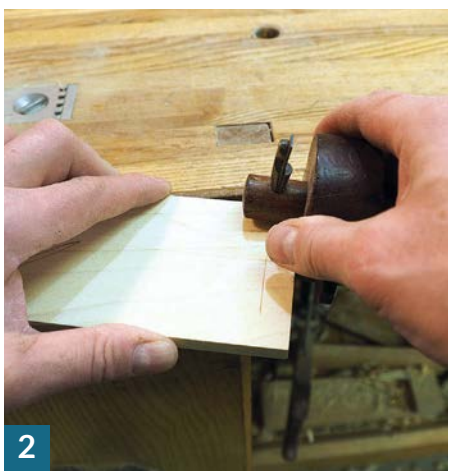
Starting at the first half pin mark, walk the dividers across the end grain of the drawer. Place the divider in the other half pin mark and walk the dividers back – this involves a little trial and error.

5 The marks will represent the edges of the dovetails. If you don't like the layout, simply change the divider length. I rather like having very narrow pins, which is considered the 'English' style. Tails are angled at approximately 1:6. To set this angle, use a bevel gauge and carpenter's square or a shop-made dovetail gauge.

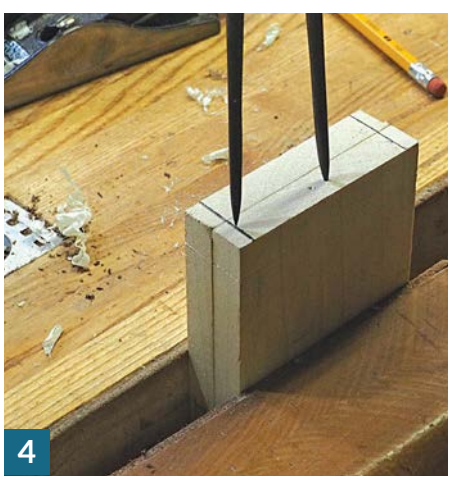
6 Pencil in the tails using a chisel tip pencil for a clear accurate line.

7 Mark the waste and cut the tails on the waste side. Here you'll need to ensure you are sawing perpendicular to the face. ➤

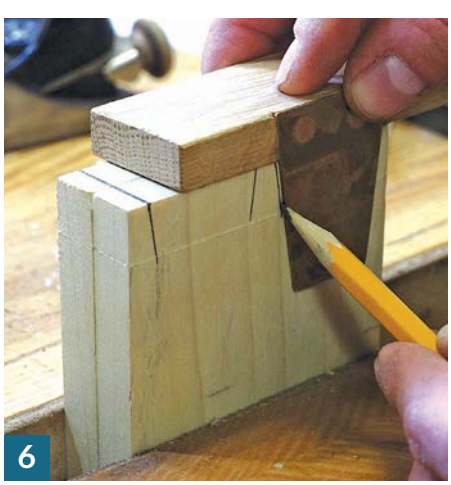

1


2


3


4


5


6


7

8 Then, with a coping saw, remove the waste. I like to do this with each board, rather than try and cope the ganged pieces.

9 Clean up the tails by chopping down in the knife line from both sides.

10 Take one tail board and drawer front (pin board) and position them face out so that the base of the tails is lined up with the inside edge of the drawer. The pin board is held in the vice with the tail board resting on the end grain and supported at the back with a plane.

11 Keeping them square, use a marking knife to mark the pin location on the end grain of the pin board. Be careful not to move the pieces during this operation.

12 Using a square, bring the lines down the inside face.

13 Mark the waste and saw at an angle to create the boundaries of the pins. As you're sawing, make sure you don't go beyond the end grain knife line. Sawing into the face is OK, however, and historically accurate (it also shows they were hand cut).

Mark the matching parts

14 Cutting the pins: start by placing the largest chisel that will fit within the waste area, bevel out, about 1.5mm from the line and chop into the waste.

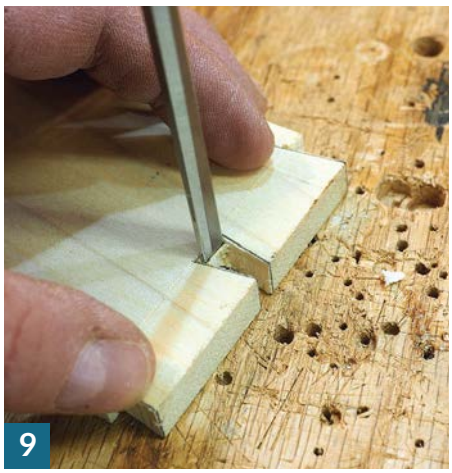
15 Then, from the end grain, remove the waste. Repeat this process until you have excavated the majority of waste.

You will need to chisel down along the side of the tails where the saw could not reach. Cherry is a brittle wood, and chopping too hard on the half pins can cause splitting, so go easy. To reach into the corners, use a smaller chisel or a skew chisel.

Lastly, place the chisel in the knife line and chop down, adding a slight undercut. This will allow the tail to snap into place without binding. Clean up the tail sockets.

It's a good idea to add a small chamfer to the inside edge of each tail. This makes for a cleaner joint and a place for excess glue to go.


8


9


10


11


12


13


14


15

16 Test fit the joints. With dovetails it is important to not over-test as this makes for a sloppy fit. If you do need to tweak the fit, go easy. As these are custom-fit dovetails it's a good idea to mark the mating boards. The extra 1mm that was added in the beginning can now be planed off.

Laying out through dovetails

The back of the drawer is also 9.5mm and has two through dovetails – the first part of the layout is very similar to half-blind dovetails.

17 First take the width of the board plus 1mm and mark this all round the ends of the sides and back board. The back board will be the pin board. If the sides had the pins the back would have little strength and could be pulled off.

18 Using the same technique we employed to mark out the tails for the blind dovetails, lay out, saw, cope and chop the tails on the sides.

19 Now lay out the pins on the back of the drawer by superimposing the tails on the pin board.

20 Remove the waste in exactly the same way that the waste was removed from the tails. However, be careful chopping down, remember the sides are wider on one side.

21 Clean up the joints. Do not chamfer the tails as this will be seen on the sides. Then test fit.

So there you have it – a tried and tested method of creating beautiful hand-cut dovetails.

Don't forget the drawer needs a bottom; the details of adding one can be found in issue 11 making a jewellery box but here's a quick reminder:

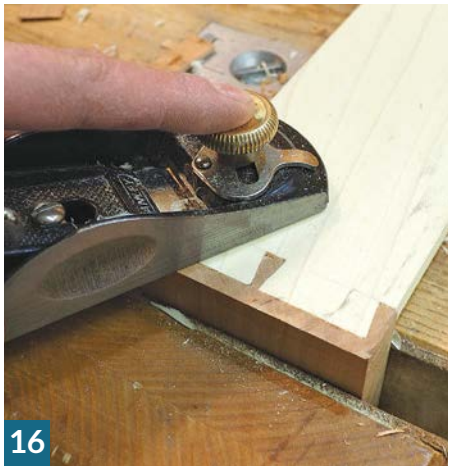
22 Set the combination plane so that it will cut a 6.5mm x 6.5mm deep groove that lies within the bottom tail and pin on all sides of the drawer

The back actually does not need a groove as the board sits on the drawer bottom, but planing the groove will give the exact location. Saw off the section, on the back, from the groove down.

The drawer bottom is a piece of 9.5mm board (grain running parallel to the front) that has a chamfer planed on the underside allowing the bottom to slide into the groove. This board is glued only at the front edge, allowing all seasonal movement towards the back.

Why not experiment with uneven pins combining large and small tails? Look at issue 11 where I use a novel 'French' dovetail. And if that's not enough to put you in a tailspin – maybe in another article we'll look at creating the mysterious hidden mitred dovetail joint. ■

Next Month Michael makes a cope and stick sled.


16


17


18


19


20


21


22

Dig in!

What you will need

- All timber is pressure treated
- Sides – 2 off – 3000 x 150 x 25 mm gravel board
- End boards – 2 off 1270 x 150 x 25mm gravel board
- Ground stakes 4 off 360 x 60 x 30mm counter rail – cut a point to lower end; 24 off 4 x 50mm exterior grade screws
- Treat any cut ends with wood preservative. The timber can be obtained from a fence supplier

Safety notes

Close supervision is required if a child is assisting with construction. The timber used is rough sawn, so there is a risk of splinters. It is also pressure treated so ensure that hands are well washed after handling the material.

James Hatter enlisted the help of his eight-year-old grandson Kieran to make a raised bed for vegetables

Using an enclosed area to contain soil provides an efficient way of growing a range of vegetables, and has many advantages over open beds. The most obvious are that they are easier to get to; provide deeper cultivated soil, that becomes less compacted and that it is easier to protect crops in them with net or glass.

This project describes making a frame that is 1270mm x 3050mm, using pressure-treated fence gravel boards, that are 150mm wide and 25mm thick. The frame is secured in position using ground stakes at each corner. Exterior grade screws are used to hold the frame together, and to attach the frame to the ground stakes.

1 The area intended to locate the frame is cleared and prepared.

2 The end boards are cut to length, and the thickness of the side is drawn at each end to allow screw fixing positions to be marked.

3 The ground stack positions are marked, using the previous marking as an outer guide. The ground stake position is also marked on the end of each side board. Take into account when deciding hole position that the screws will not clash.

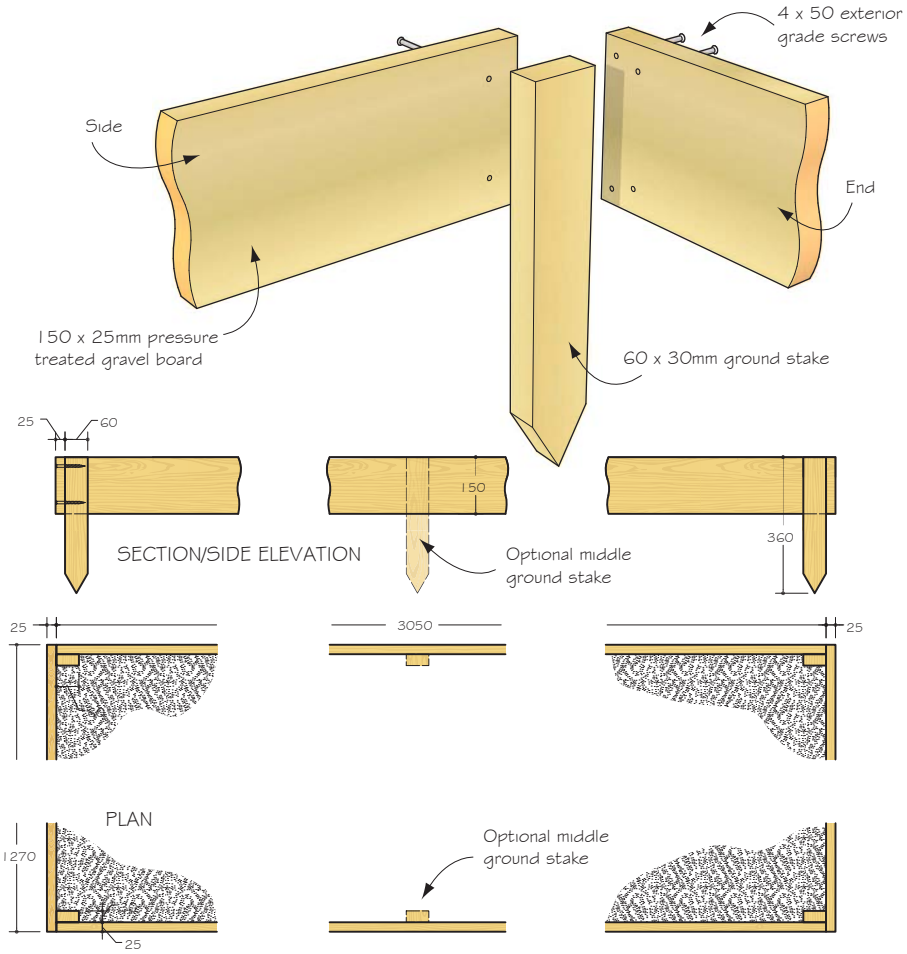
4 With the board held securely. clearance holes are drilled to take the securing screws.

5 The boards are placed in position and 4 x 50mm exterior grade screws are used to hold the ends of the frame to the sides.

6 The frame can now be accurately positioned and squared and levelled up.

7 Drive a ground stake into each corner of the frame, ensuring that the stake fits snugly within each corner. The frame could also have a ground stake at the centre of each long side. The frame to each ground stake with screws.

8 The job's done and Kieran is rightly proud of his woodwork! ■


4 x 50 exterior grade screws
Side
End
150 x 25mm pressure treated gravel board
60 x 30mm ground stake
25
60
150
360
SECTION/SIDE ELEVATION
Optional middle ground stake
25
3050
25
PLAN
1270
Optional middle ground stake
25


1


2


3


4


5


6


7


8

TREND T11 2000W ROUTER

The ultimate workshop router with built in Quick Raiser fine height adjuster.

www.trend-uk.com

AD/16/11

Triton jigsaw test

Triton has been busy creating new powertools and we get our hands on their latest, the 750-watt Pendulum Jigsaw

This machine comes in the familiar Triton orange and black and is the grip type rather than a rotating scroll knob or an enclosed hand grip. It is large and powerful at 750watts but isn't revolutionary as such, it fills a gap in the range instead. Like other similar machines it has a blade quick release, three-stage orbit and can take an extraction pipe. Tilting the base for bevel cuts is as simple as pressing a lever underneath and sliding the shoe before tilting and locking. At the rear is the variable speed control and the side on-off switch is a push-on, flick-off type biased for right-handed users. There is a simple wire blade guard as well as the smoked plastic cover above which doubles as the blade release.

Inside the Triton tote bag is a smaller case which holds the accessories – a fence, protective base, guide rail base, extraction pipe and spare blades. The guide rail base is useful, although I have never regarded jigsaws as precision tools that follow straight lines.

The Numbers

Motor input: 750watts/220-240 volt only
No load speed: 800-2,900opm
Cut angles: 15/30/45 degrees eft or right
Cut stroke: 25mm/3 stage pendulum action
Cut depth: 110mm wood 25mm aluminium/10mm steel
Weight: 3.5kg
Price: £94.22 inc VAT (check for discount prices online)
Visit: www.tritontools.com for more information

Verdict

Extraction wasn't great, however this is not unusual for jigsaws, also there is no dust blower or worklight. However this is a good functional machine with plenty of power that will serve you well on site or for large or awkward jobs that no other tool will look at. ■

The contents of the accessories case

Right: The smooth soleplate of the Triton jigsaw

Scrollsawn Butterflies & dragonflies

Summertime has definitely arrived when butterflies and dragonflies are flitting around the garden. Now you can create your own marvels of nature.

By **Joe** and **Paige Paisley**

Materials:

- Wood scrape ranging in size up to: ¾in x 4inx 4in (19mm x 102mm x 102mm)
- Spray adhesive, temporary-bond
- Tape, clear plastic: 2in (51mm)-wide
- Epoxy, five-minute or microbed
- Toothpicks
- Finish
- Sandpaper: assorted grits
- Wire: 20 gauge or 3in wire wheel (arms, legs, and antennae)

Tools:

- Band saw (for resawing for thickness)
- Scroll saw blades: #2 reverse-tooth
- Pliers, needle nose
- Power carver or sander (optional)
- Butterflies and dragonflies pattern.

We designed these butterflies and dragonflies to use all of the small but highly figured pieces of wood we had lying around our shop. You can't just throw them in the fireplace, and these little critters are great items to sell or give away. We hope this project helps you empty that box of little scraps of wood you have been saving.

Instructions

1 Choose the stock. The wood might be from a knot or a knee from a tree limb – but use highly-figured wood. Resaw the wood to between 1/16 in and 1/8 in thick.

2 Keep the slices in order. When you have sliced the wood, you will notice that you have a matched 'flitch' or set of pieces. Keep this in mind when you are stacking your wood so that your butterfly wings are matched.

3 Assemble four pieces of wood for stack cutting. Then attach them together with glue, pin nails, or dowels. This stack will give you at least two butterflies. If you attempt more than four layers at 1/16 in to 1/8 in thick, it will be hard to fit the pieces together. Study the pieces of wood and choose the best grain pattern before attaching the pattern in place, using your spray adhesive of choice.

4 Cut out the wings using a #2 blade. A zero-clearance table is also useful; that way the parts fly up instead of down, and you can see which way the parts are going when they hit the floor. I also have a catch-all under the table; it catches 90% of the pieces that come through. Keep all the parts in order as you cut them so the grain will all go in the same direction.

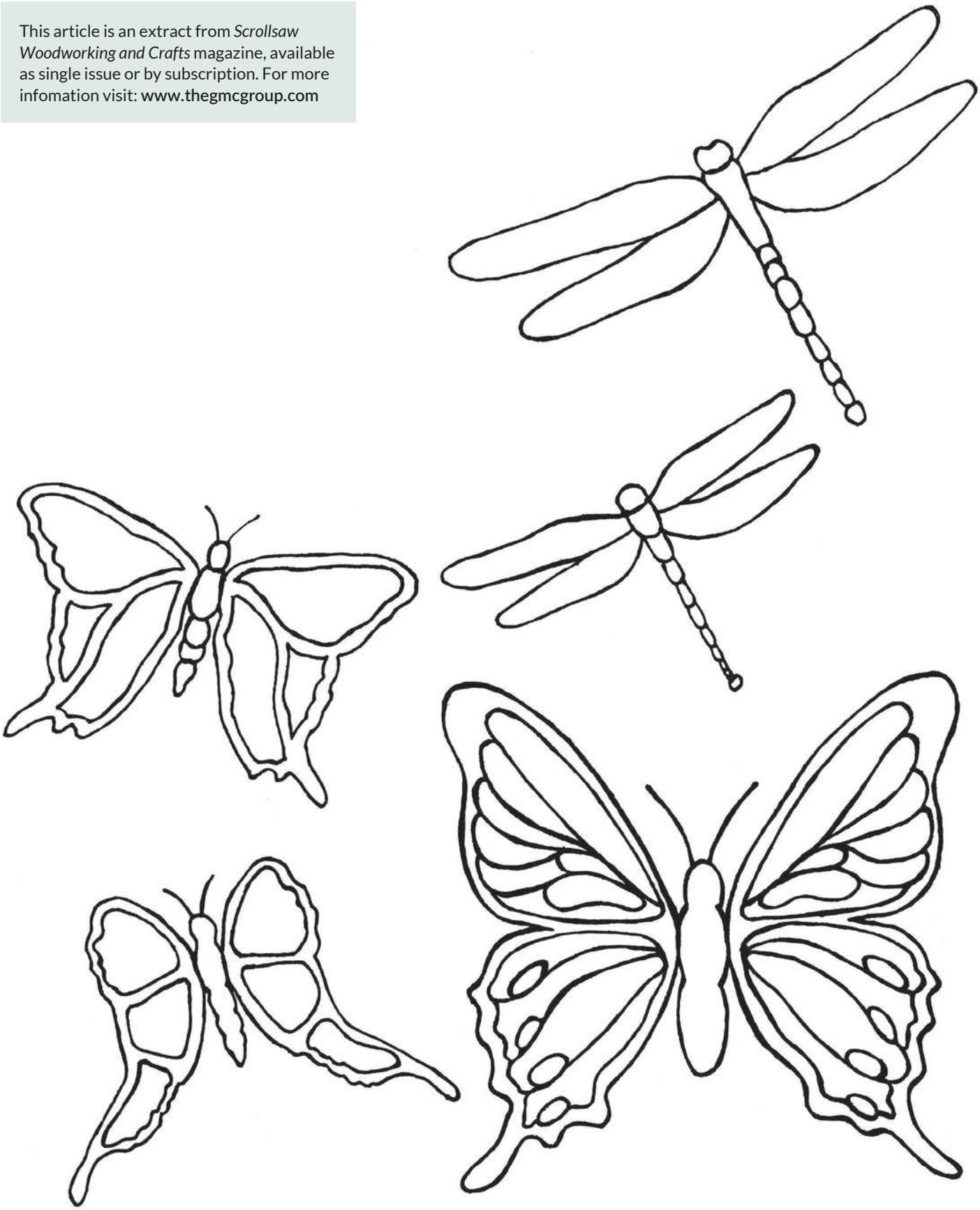
5 Separate the pieces. Spread 2in-wide clear tape out over an area, sticky side up, to collect the parts. Place each wing on the tape, and interchange the pieces. Mix up the colours to form a unique pattern for each insect. When you have all the pieces laid out, mix up a small amount of a clear five-minute epoxy or a microbed epoxy, with a toothpick. Microbed epoxy gives you a dark line. Cover the entire wing, and work it into the cracks quickly, because the epoxy sets up fast.

6 Sand the wings. Use your method of choice (power carver, palm sander), but use caution. The glue will heat up if you power sand it, and the heat will weaken the epoxy joints. You want to remove any excess epoxy, but you don't want the pieces to fall apart.

7 Cut the insect bodies. Choose a body colour that will complement the wings of the insect. The body of your insect is 1/8in or 1/4in depending on the size of your insect. The body is cut on a scroll saw and rounded with a power carver or sander. When the body of your insect is completed, glue the wings to the body with a five-minute epoxy.

8 Add the arms, legs, and antennae. I use wire from a wire wheel or a thin gauge wire bent into shape with needle-nose pliers for the arms, legs, and antennae. You need two for the antennae, four for the legs, and two for the arms. Drill the holes for the wire. Glue the wire in with epoxy. Sand off the excess epoxy. Paint the wire with black or brown enamel craft paint.

9 Finish the project. Use Deft semi-gloss or gloss laquer spray or your finish of choice. You can use this as your completed project, or you can mount it on a magnet or a little box. They make great gifts and sell well at craft fairs and gift shops. ➤



SEDGWICK WOODWORKING MACHINERY

TA450 TILT ARBOR SAWBENCH

Solid, powerful and efficient: our flagship Table Saw includes a range of features designed to improve safe working, longevity and performance.

- 3ph 5.5Kw High-Efficiency Braked Motor.
- 1125x1000mm Cast-iron table with anti-friction planed finish.
- 0 - 155mm Rise & Fall / 90 - 45 degree Tilt.
- Heavy duty cast-iron trunnion assembly with integrated rear extraction port.
- Polycarbonate overhead sawguard with 100mm dia extraction outlet.
- Spindle-lock for changing sawblade.
- Cast-iron fence bracket with integral micro adjustment. The aluminium section allows for two working positions (ripping and angled ripping) and for movement fore and aft in relation to the sawblade. The assembly runs on a nylon roller, gliding easily across the beds, and is supported by a 40mm dia, 915mm capacity, solid steel bar.
- Padlockable isolator; Lock-off Emergency Footstop; E-stop Button; Overload protection.

For further details of this & our complete range of woodworking machinery please visit www.sedgwick-machinery.co.uk, or contact us at:

M. Sedgwick & Co. Limited, Stanningley Field Close, Leeds LS13 4QG

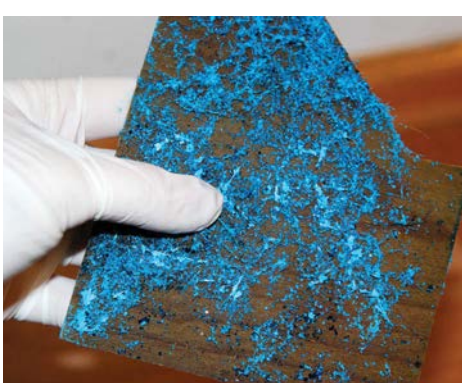
E: sedgwickmachinery@btinternet.com Tel. 0113 257 0637 Fax. 0113 239 3412

Coming next month in
Woodworking CRAFTS

ISSUE 28 ON SALE 8 JUNE

Oak and ash bed
by James Hatter

Cabinet repair



Fuming and tanning

Moulding cutters

PLUS: *Hand planing tricks • Timber series – Mahogany Bench aids • Coping sled • and lots more!*

Thomas Flinn & Co.

Saw & Hand Tool Manufacturer
Sheffield, England

The UK's last remaining traditional saw manufacturers.

Now also manufacturing Clifton Planes

Garlick MADE IN SHEFFIELD ESTABLISHED 1858 · E.T. ROBERTS & LEE · PAX ESTABLISHED 1776 · CLIFTON

www.flinn-garlick-saws.co.uk
orderonline@flinn-garlick-saws.co.uk
Tel: 0114 2725387

10 TIPS *for* CLAMPING

An artful way to apply centre pressure using a board on edge with packers under the middle where there is least pressure. This setup is making use of a benchtop

Always check carcasses are truly square while the glue is still fresh. Corner to corner measurement is an accepted way to do this. Slight adjustment of clamp heads can be enough to correct misalignment

If you need to get a grip on your woodworking we have some good advice...

Clamping is a big subject, but we are going to give you a few useful tips to get you started. Just remember that whatever clamps you have, you will end up needing a lot more and there are different types to suit different jobs. There are more options to choose from than ever, so choose carefully as you build up your stock of clamps.

1 Modern quick clamps work in most situations but make sure the pads are carefully placed so they don't distort the workpiece. Use plenty so the length of a joint is firmly closed before the glue has a chance to set. Some quick clamps have a settable lock for the clamping pads which is best used most of the time unless there are awkwardly shaped clamping surfaces.

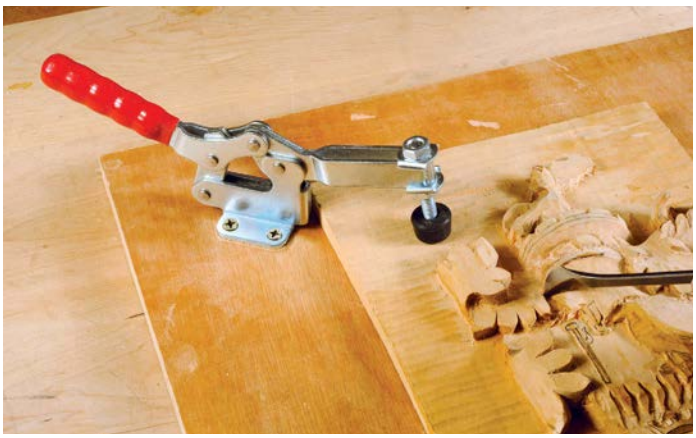
2 Sash or T-bar clamps are still very effective for panel clamping. You can use the bar to press the panel firmly on to so you know it is flat. It is often necessary to have several clamps from the other face to trap the panel and stop it 'springing'. There are special panel clamps available but unless you do a lot of panels it is probably better to use sash clamps.

3 If you use sash or T-bar clamps make sure you use protective pads on the clamp heads to avoid denting the work and use paper to prevent water in the glue from causing iron staining on the workpiece. Quick clamps normally come with protective pads as standard.

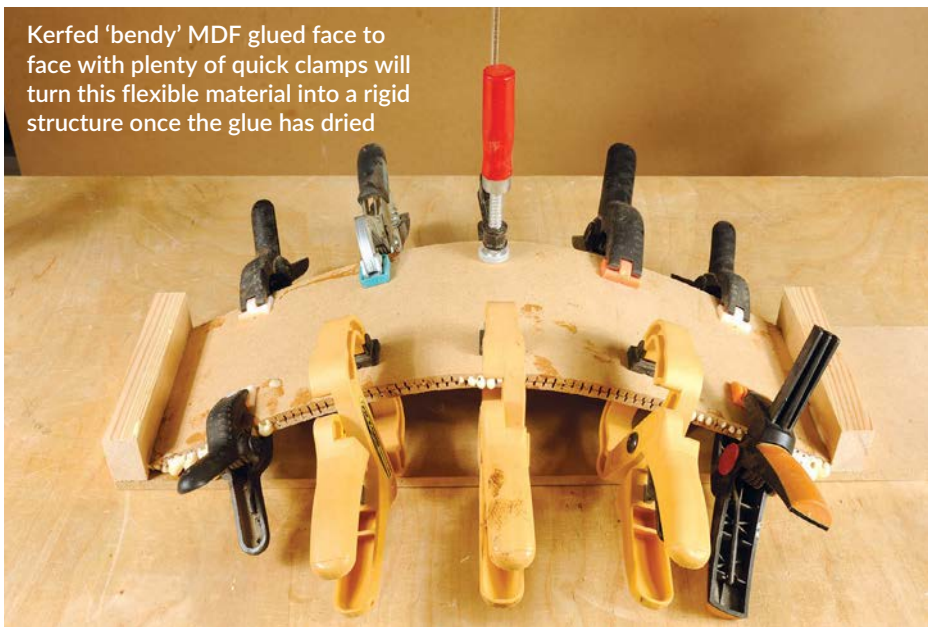
4 Smaller squeeze clamps or spring clamps are incredibly useful for smaller jobs. You will need plenty as they need close spacing to keep thinner components pressed together and ensure even glue 'squeeze out'. Clean up excess glue promptly and run a damp cloth along joints to wipe away any remaining glue.

5 Car luggage straps make excellent carcass clamps or for holding repaired re-glued chairs together. Four is a good number unless you need to undertake more than one job at a time. You can avoid corner damage by

Modern quick clamps are often designed to change into 'spreaders' for careful separation of loose joints without causing damage such as when using a mallet



Toggle clamps come in a variety of patterns and are particularly good for workholding on jigs. Quick to fit and quick to use when batch working



Kerfed 'bendy' MDF glued face to face with plenty of quick clamps will turn this flexible material into a rigid structure once the glue has dried

Always check for square as the pressure exerted at top and bottom of a clamp pad may vary and the angle may not be quite right

Luggage straps with or without corner protection make carcass glue-ups quick and easy to do

An awkward shape to clamp but two wedges lined with abrasive paper mean the joint can be closed without the panel clamp sliding off

squashing with the straps by usingrigid cardboard corners, which sometimes come in packing for domestic'white goods'.

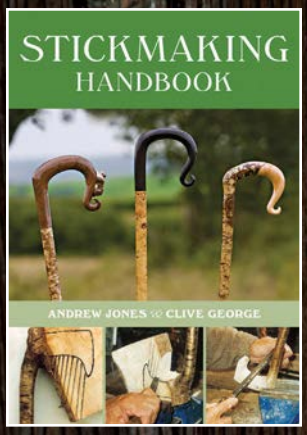
6 Checking for distortion and squareness after clamping is essential. Corner to corner measuring for carcasses or using an accurate square to check smaller components will ensure everything is as it should be before the glue has a chance to set. Use a straightedge on supposedly flat surfaces to make sure they haven't got distorted out of shape.

7 Awkward shapes can be clamped successfully with careful preparation. In the case of a corner mitre triangular joint blocks with abrasive facings glued to them, allow clamping across the joint. Another triangular piece can be placed inside the frame shape to allow another clamp to be applied.

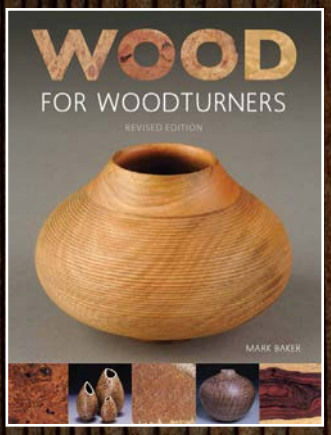
8 Bench dogs can be very useful as an effective means of clamping for both working on wood, such as hand planing, but also gluing and clamping. You need to check that there isn't a lot of glue squeeze out underneath that could spoil the face. You may need to unclamp, turn it over, re-clamp and wipe off the excess glue.

9 Clamping isn't just for glue-ups, it is essential for doing dry assemblies to check everything is going together well before gluing. It is also essential for workholding when doing a variety of operations, such as routing. Quick clamps make positioning of jigs and components quick and precise.

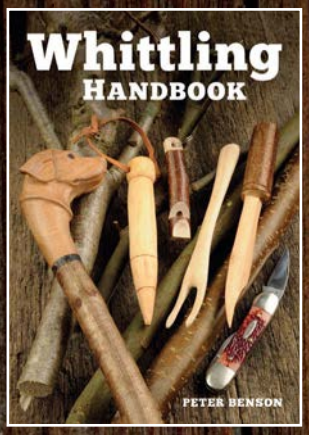
10 You will need some sort of clamp rack or clamping bar so you can store clamps neatly and access them quickly. This can be on the wall or if space permits a mobile storage rack. ■



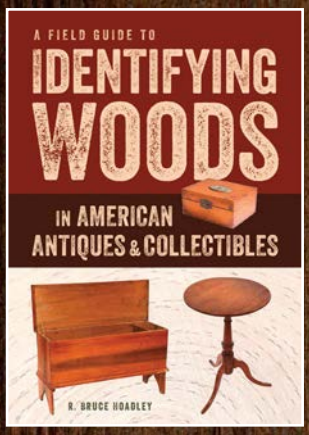
Quick Find Code: 25610
Stickmaking Handbook
£7.99



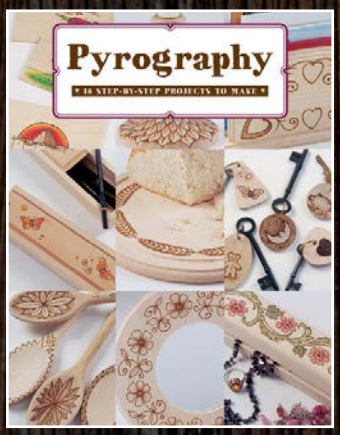
Quick Find Code: 25773
Wood for Woodturners
Revised Edition
£16.99



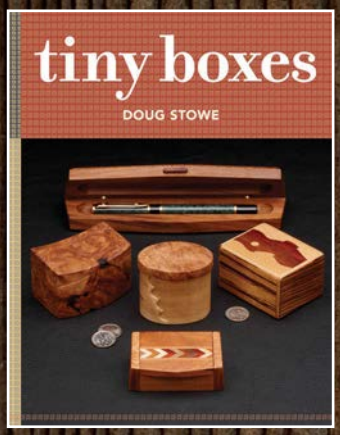
Quick Find Code: 25478
Whittling Handbook
£7.99



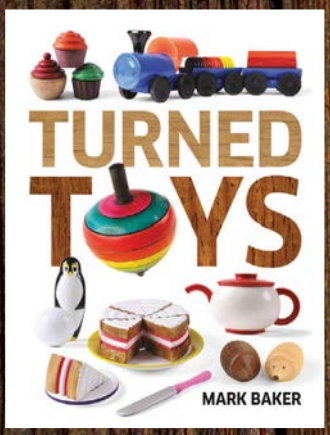
Quick Find Code: 27275
A Field Guide to Identifying Woods
£19.99



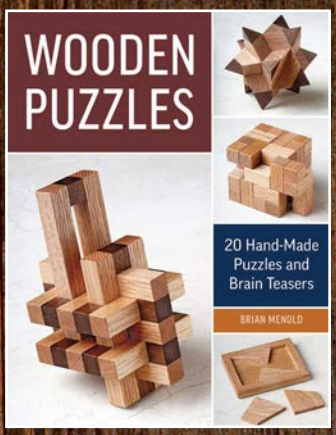
Quick Find Code: 26136
Pyrography
£5.99



Quick Find Code: 27276
Tiny Boxes
£17.99



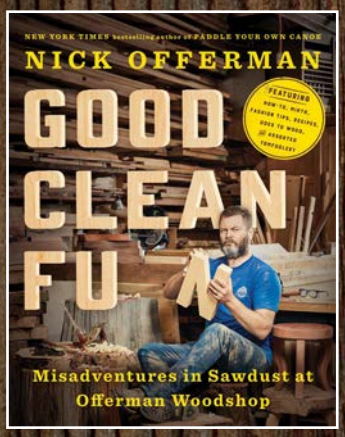
Quick Find Code: 25371
Turned Toys
£16.99



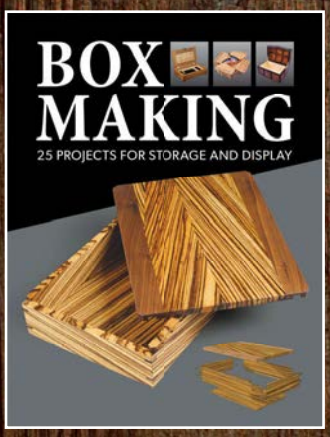
Quick Find Code: 27349
Wooden Puzzles
£17.99

NEW **WOODWORKING** BOOKS

Quick Find Code: 26498
Weekend Woodworking
£14.99



Quick Find Code: 27331
Good Clean Fun
£25.00



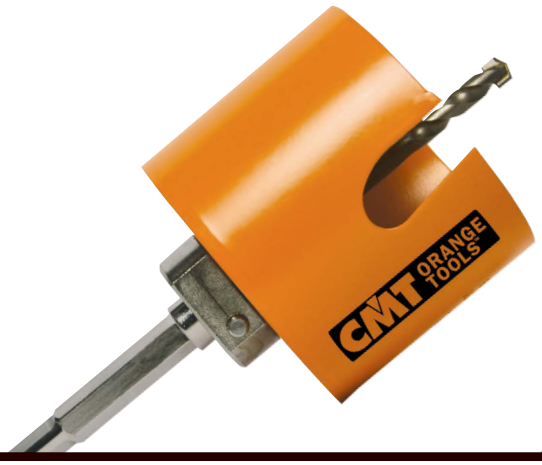
Quick Find Code: 26501
Box Making
£14.99

Hundreds of inspiring Woodworking and DIY books available
Visit **www.thegmcgroup.com** or call **01273 488005**

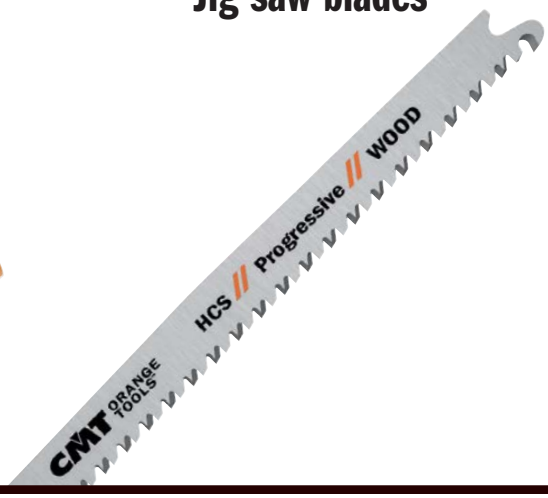
CMT ORANGE TOOLS™

Saw blades

Hole saws



Jig saw blades



Sabre saw blades

Tools with bore & knives

Router bits & sets

THE WIDEST TOOLING RANGE

TOMACO
THE TOOL MARKETING COMPANY

For more information and to find your nearest stockist please visit www.tomaco.co.uk

SUBSCRIBE TODAY
SAVE UP TO 30%!

SAVE 10% ON ANY OF THESE MAGAZINES – OR 30% IF YOU PAY BY DIRECT DEBIT

For those who love to make furniture

Furniture & Cabinetmaking is an essential read for the furniture maker. Topical features, industry news and reliable reviews complete the mix of content.

The best-loved woodturning magazine

Woodturning is the world's best-selling magazine for woodturners. Every issue is packed with projects, essential advice for both the hobby woodturner and professional, and features on turners around the world.

Guidance and inspiration for ambitious carvers

Through fantastic projects and instructional techniques from top professional and talented amateur carvers, *Woodcarving* offers something for everyone. Project include wildlife, chip carving, relief, and stylized carving.

3 EASY WAYS TO SUBSCRIBE

1 CALL
01273 488005

2 VISIT
www.thegmcgroup.com

3 POST
FREEPOST RTHA -TGLU -CTSK, GMC Publications Ltd, 166 High Street, Lewes, BN7 1XU

Please quote order code A4808

Subscriber details

Title | Initial | Surname

Address

Postcode | Country

Telephone | Email

Subscription options (please tick the appropriate magazine and price)

	Pay by cheque/card SAVE 10%	Pay by Direct Debit SAVE 30%
Furniture & Cabinetmaking (12 issues)	£45.90 (UK), £57.83 (Europe), £64.26 (Overseas)	£35.70 (UK only)
Woodturning (12 issues)	£42.66 (UK), £53.33 (Europe), £59.72 (Overseas)	£33.18 (UK only)
Woodcarving (6 issues)	£21.33 (UK), £26.66 (Europe), £29.86 (Overseas)	£16.59 (UK only)

The Direct Debit Guarantee: This guarantee is offered by all Banks and Building Societies that take part in the Direct Debit Scheme. The efficiency and security of the Scheme is monitored and protected by your own Bank or Building Society. Please see your receipt for details. Guild of Master Craftsman Publications will ensure that you are kept up to date on other products which will be of interest to you. If you would prefer not to be informed of future offers, please tick this box ☐
Offer expires 31/08/2017 Plus free gift with some issues; sorry not available overseas

Payment methods (please tick and fill in chosen option)

☐ I enclose a cheque made payable to GMC Publications Ltd, or ☐ Please debit my credit/debit card

Card No.

Start date | Expires | Security code

Signature | Date

☐ Direct Debit — Instructions to your Banks or Building Society

Name of account holder

Bank or Building Society account no.

Bank or Building Society sort code

Name and full postal address of your Bank or Building Society

Name

Address

Postcode

Originator's identification number 6 5 9 9 5 7

Reference number (office use only)

Instruction to your Bank or Building Society:
Please pay GMC Publications Ltd Direct Debits from the account detailed in this instruction subject to the safeguards assured by the Direct Debit guarantee. I understand that this Instruction may remain with GMC Publications Ltd and, if so, details will be passed electronically to my Bank/Building Society.

Banks and building societies may not accept direct debits for some types of accounts.

Signature | Date

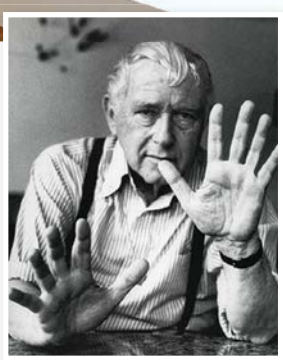
A4808

Focus on…

Right: a line of Wassily chairs

Isokon recliner in a museum in Cologne

PHOTOGRAPHS COURTESY OF WIKIPEDIA COMMONS



Marcel Breuer

The 20th century was a time of great change which found artistic expression in radical movements like Modernism and Bauhaus. Marcel Breuer's designs embraced both

Marcel Breuer was a Hungarian-born Modernist, architect and furniture designer who lived from 1902 – 1981. He became a very young member of the Bauhaus school of radical arts and crafts. It was the use of tubular steel bicycle handlebars that inspired him to produce furniture designs in the same manner, one of the most famous being the 'Wassily' chair, christened thus after the design was relaunched in the 1960s.

In 1936, Breuer relocated to London to escape the increasingly powerful Nazi regime in Germany. In London he was employed by Isokon which was producing Modernist furniture. This resulted in his well-known bent plywood recliner. We have to remember that at the time using bent formed plywood was unheard-of and a step change in manufacturing wood technology. Some years ago a prototype was given conservation treatment at Bucks New University, because the birch ply had been assembled using hide glue in which the common furniture beetle (*anobium punctatum*) found a perfect home. In actual production, an inedible modern glue was employed instead.

Breuer in concert with fellow architect Walter Gropius later had a significant impact on the design of the modern American home, when they moved their professional practices to Harvard. But despite Breuer's architectural influence and successes in the US with more than one hundred buildings to his name, it is perhaps his influence on modern furniture design for which he is best remembered in the UK. So much so, that his designs are still being manufactured today. ■

TOMACO

THE TOOL MARKETING COMPANY

DISTRIBUTORS OF QUALITY PRODUCTS

SHARP EDGE

Chisel and plane iron sharpener - take anywhere and sharpen in seconds.

narex®

Quality range of woodworking hand tools made in Europe.

COLT® PROFESSIONAL TOOLS

A quality range of professional Drill bits and accessories from Germany.

TOMAHAWK TOOLS

A quality range of professional tools and accessories.

VETO PRO PAC® TOOL BAGS THAT WORK

Range of the toughest tool bags with a 5 year downtime warranty.

CMT ORANGE TOOLS™

Quality cutting tool range which includes Router cutters, Spindle Moulding, saw blades, holesaws and many more from Italy.

FOR YOUR NEAREST STOCKIST VISIT

www.tomaco.co.uk

The **special** one. The **normal** one. It´s time for the **superior** one.

KAPEX KS 60 - the new sliding compact mitre saw.

SERVICE
all-inclusive

Mobility, versatility and precision are integral to the new KAPEX KS 60 sliding compound mitre saw. Its low weight and ergonomic handles make it easy to transport and extremely comfortable to use, whilst the compact design, LED spotlight and bevel, ensure exact precision.
With the double sided inclination angle of 47 and 46 degrees respectively the KAPEX KS 60 has one aim only: to inspire you from the very first cut.

For more information visit our website at www.**festool**.co.uk/KAPEX

FESTOOL
Tools for the toughest demands