EST.1901

STILL THE ORIGINAL AND THE BEST

The Woodworker & Woodturner

June 2013

www.getwoodworking.com

Upgrade your workshop
Squaring the circle
Trestle support

Frankfurt Kitchen

Restoring a classic

CABINET ON DISPLAY

GOLD TOP FINISH

BOX MAKING BASICS

PLUS: GRINDING AND SHARPENING ■ ALL THE LATEST KIT

9 771752 352181 06

£3.75


“THE MINIMUM 5 YEAR GUARANTEE GIVES ME COMPLETE CONFIDENCE IN THE PRODUCT QUALITY
...Plus the bits I get are impossible to find anywhere else!”
Stephen, Brighton
Trustscore for IronmongeryDirect is 9.3 of 10, based on over 2000 customer reviews.
UK’S BIGGEST RANGE
NEXT DAY DELIVERY
MINIMUM 5 YEAR GUARANTEE
FREE ‘NO QUIBBLE’ RETURNS
CALL TODAY FOR YOUR FREE CATALOGUE
0808 168 28 28
IronmongeryDirect.com
ORDER BEFORE 7.30PM FOR NEXT DAY DELIVERY
FREE DELIVERY ON ORDERS OVER £45
Or TEXT RBA23 to 62244 FREE!
(With name, address and email).
IronmongeryDirect
MASTERS OF OUR TRADE
DOOR FURNITURE • WINDOW & JOINERY HARDWARE • SLIDING DOOR HARDWARE • HINGES • DOOR CLOSERS • FIRE CONTROL • SIGNS
LOCKS, LATCHES & SECURITY • CABINET FURNITURE • SHELVING & STORAGE • BOLTS & STOPS • SEALANTS & ADHESIVES • SCREWS & FIXINGS

welcome

I think we all like to feel part of something, that we belong. Here at *The Woodworker* that's exactly the case, whether you're a regular reader, a contributor, or just an occasional browser in your local newsagent. If you're a woodworker, you're part of an extended family that reaches right around the world. We all share common interests as well as a desire to further our woodworking knowledge and experience, and maybe to improve our work at the bench into the bargain!

Tell me a story

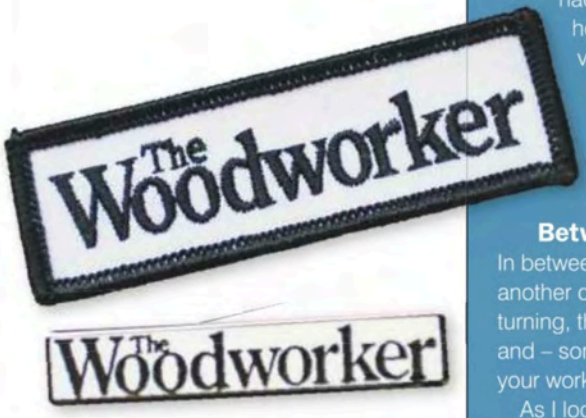
I'm interested in everything you have to tell me, regardless of whether you might think it worthy or not, so please continue to send in your woodworking stories and experiences, and especially any photos of actual work. I was talking to one of my college students the other day about his grandfather's work; it sounded great, but sadly he didn't have any pictures to show off his achievements.

Last week I had a call from reader Gavin Hyatt in South Wales. He told me about a fascinating job he was currently engaged with. I liked the sound of it, so I went over to Newport to have a closer look. I'm very pleased I did, and hopefully you'll be as interested as I was when you read about it in the next issue.

Badge of pride

My visit to Wales coincided with the delivery of some new *Woodworker* badges I've just had made up. These are for anyone who contributes to the magazine in some way, however modest. Gavin became the first recipient of the new badge, and was very pleased indeed, despite the lack of ceremony of the presentation.

Needless to say I wear mine daily, and not without a certain degree of pride either! I have to confess that I've not yet sewn the embroidered version onto my apron, but to be honest, that's more of a paint-spattered rag than an article of protective clothing, and deserves burning more than embellishment.



The Woodworker

Between the covers

In between various other woodwork-related activities, I've found the time to put together another cracking magazine for you all. As well as some excellent advice on making and turning, there's sage advice on geometry, more to consider when it comes to sharpening, and – something perhaps I should be thinking about – how to improve the efficiency of your workshop.

As I look around at the random and jumbled collection of tools, machines, offcuts and sawdust that is my place of work, I suspect that my untidiness may well be a trait I share with a few others of our woodworking family…
but not too many, I hope.

mark

CONTENTS

What's in store for you this month


page 79


page 73

page 27

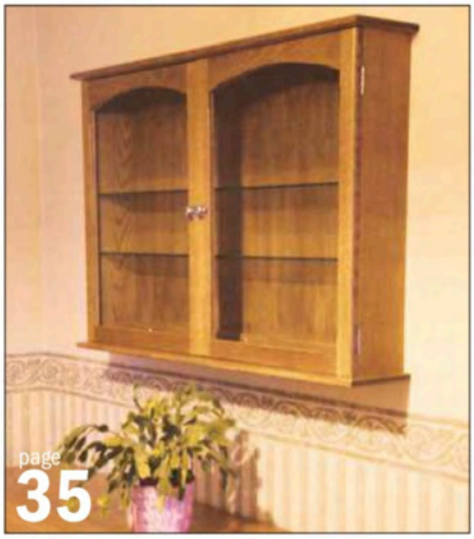
THE FRANKFURT KITCHEN


page 68

NEXT ISSUE

THE SUMMER ISSUE IS OUT ON MAY 31ST


page 80


page 35


page 12


page 64

REGULARS

page 19

WOODWORK

TURNING

ON TEST

The Woodworker & Woodturner

June 2013

Published by **MyTime Media Ltd**
Hadlow House, 9 High Street,
Green Street Green, Orpington, Kent BR6 6BG

Tel: 0844 412 2262
From outside UK: +44 (0)1689 869840
www.getwoodworking.com

SUBSCRIPTIONS
UK - New, Renewals & Enquiries
Tel: 08456 777 807
Email: mytimemedia@subscription.co.uk
USA & CANADA - New, Renewals & Enquiries
Tel: (001) 877 363 1310
Email: expressmag@expressmag.com
REST OF WORLD - New, Renewals & Enquiries
Tel: +44 (0)1689 869896

BACK ISSUES & BINDERS
Tel: 0844 848 8822
From outside UK: +44 (0)2476 322234
Email: customer.services@myhobbystore.com
Website: www.myhobbystore.co.uk

EDITORIAL
Editor: Mark Cass
Email: mark.cass@mytimemedia.com
Production editor: Mike Lawrence
Email: mike.lawrence@mytimemedia.com

PRODUCTION
Designer: Malcolm Parker
Illustrator: Michael Lindley
Retouching Manager: Brian Vickers
Ad Production: Robin Gray

ADVERTISING
Business Development Manager: David Holden
Email: david.holden@mytimemedia.com
Tel: 01993 709545

Online Sales: David Holden
Email: david.holden@mytimemedia.com
Tel: 01993 709545

MARKETING & SUBSCRIPTIONS
Sarah Pradhan & Kate Scott

MANAGEMENT
Head of Design & Production: Julie Miller
Group Sales Manager: Duncan Armstrong
Chief Executive: Owen Davies
Chairman: Peter Harkness

mytimemedia
print & digital media publishers

The Woodworker & Woodturner, ISSN 1752-3524, is published 13 times per year by MyTime Media Ltd. c/o USACAN Media Dist. Srv. Corp. at 26 Power Dam Way Suite S1-S3, Plattsburgh, NY 12901. Periodicals postage paid at Plattsburgh, NY. POSTMASTER: Send address changes to The Woodworker & Woodturner c/o Express Mag, P.O. Box 2769, Plattsburgh, NY 12901-0239.

'THE' TOOL SUPERSTORE

DM-TOOLS.CO.UK

Your No1 choice for Hand Tools, Power Tools & Machinery

D&M Tools has been family owned and managed since 1976. We have earned a reputation with our customers as a trusted partner with the personal touch, combined with expert advice from our trained staff, great value and speedy nationwide delivery service – **PLUS delivery is FREE for most orders over £99.**

LOW TRADE PRICES!

Whether you're buying online, by phone, email, post or visiting us in-store, D&M provides you with the widest range of quality hand, power tools and machinery all at the keenest prices and from stock.

UNBEATABLE VALUE!

Visit our easy-to-use website to see what we mean about range and value. Browse and buy with confidence 24hrs a day from the biggest brands in the business, all at prices you'll find hard to beat.

Why not subscribe to our regular email to keep up with our latest deals and offers!

FREE CATALOGUE

OVER 650 PAGES PACKED FULL OF THE BEST DEALS + THE LATEST KIT!

GET YOURS NOW! VISIT OUR WEBSITE OR TEL: 020 8892 3813

MASSIVE CHOICE FROM THE BIGGEST BRANDS!

armeg · Arrow · BAHCO · BESSEY · BOSCH · BOSTITCH · DEWALT · Dickies · DRAPER · DREMEL BIG ON DETAIL · Empire · Estwing · evolution POWER TOOLS · EVO-STIK · QUALITY FAITHFULL TOOLS · Yem · FESTOOL · FISCO · freud · IRWIN · JOBMAN WORKWEAR · KÄRCHER · KITY · KNIPEX · Kreg · Kuny's · LED LENSER · Leica Geosystems · LEIH · LYTE LADDERS · TOWERS · mafell · MAGLITE · makita · IRWIN Marples · MARSHALLTOWN The Premier Line · metabo work. don't play. · MD MILLER DIAMOND TOOLS · MONUMENT TOOLS LTD · Nilfisk ALTO Why Compromise · NOBEX · Panasonic ideas for life · PROXXON · RECORD POWER ESTABLISHED 1909 · RST HAND TOOLS · SANKYO DIAMOND TOOLS · SCAN · scheppach · SDMO · SJÖBERGS OF SWEDEN · Snickers WORKWEAR · STABILA LEVELS · STANLEY · STARTRITE · SKIL MASTERS PROFESSIONAL POWER TOOLS · TACWISE worldwide · TELESTEPS No.1 in telescopic work tools · TENGTOOLS SYMBOL OF POWER · Titebond · TORMEK sharpening innovation MADE IN SWEDEN · trend routing technology · triton · ULTRA · veritas · IRWIN VISE-GRIP · Vitrex · Wera Tools. From Ideas. · Wiss · WOODSTAR powered by scheppach

THE UK's No.1 BRANDED HAND, POWER TOOLS & MACHINERY EVENT

D&M TOOLS

'THE' TOOL SHOW '13

WWW.THETOOLSHOW.COM

KEMPTON PARK RACECOURSE

4-6th OCTOBER 2013

VISIT OUR EXTENSIVE TWICKENHAM SUPERSTORE

73-81 HEATH ROAD • TWICKENHAM • TW1 4AW

020 8892 3813 • SALES@DM-TOOLS.CO.UK

FESTOOL

See for yourself our large range of Festool tools and accessories at our Twickenham Superstore!

D&M TOOLS

TS55REBQ-PLUS-FS 160MM PLUNGE SAW + T-LOC CASE + 1.4 GUIDERAIL & MIDI EXTRACTOR & FREE CLEANING KIT

- TS55REBQ-PLUS-FS Plunge Saw
- 1.4m Guide Rail
- Midi Extractor
- Cleaning Kit in T-Loc Systainer
- Systainer SYS 4 T-LOC

£589.00 INC VAT
£490.83 EXC VAT
FES 561583PROM1

SAVE OVER £317 WAS ~~£806.95~~

TS75REBQ-PLUS-FS 210MM PLUNGE SAW + T-LOC CASE + 1.4 GUIDERAIL & MIDI EXTRACTOR & FREE CLEANING KIT

- TS75REBQ-PLUS-FS 210mm Plunge Saw
- 1.4m Guide Rail
- Midi Extractor
- Cleaning Kit in T-Loc Systainer
- Systainer SYS 4 T-LOC

£719.00 INC VAT
£599.17 EXC VAT
FES 561514PROM1

SAVE OVER £329 WAS ~~£1048.55~~

CTL MINI MOBILE DUST EXTRACTOR PLUS FREE CLEANING KIT WORTH £54.95

STAR BUY

£299.00 INC VAT
£249.17 EXC VAT
FES 583358

SAVE OVER £88 WAS ~~£387.35~~

CTL MIDI MOBILE DUST EXTRACTOR PLUS FREE CLEANING KIT WORTH £54.95

£309.00 INC VAT
£257.50 EXC VAT
FES 583374

SAVE OVER £105 WAS ~~£414.05~~

STAR BUY

CTL 26E MOBILE DUST EXTRACTOR PLUS FREE CLEANING KIT WORTH £54.95

£444.95 INC VAT
£370.79 EXC VAT
FES 583498

SAVE OVER £110 WAS ~~£555.35~~

STAR BUY

RO150FEQ-PLUS ECCENTRIC ROTEX SANDER & T-LOC CASE & MIDI EXTRACTOR & FREE CLEANING KIT

- RO150FEQ-PLUS Eccentric Rotex Sander
- Midi Extractor
- Cleaning Kit in T-LOC Systainer
- Systainer SYS 3 T-LOC

£629.00 INC VAT
£524.17 EXC VAT
FES 571808AV

SAVE OVER £311 WAS ~~£940.55~~

DF500Q-SET DOMINO JOINTING SET + DOMINO ASSORTMENT

- DF500Q-PLUS Domino
- Cross Stop A-DF
- Trim Stop LA-DF
- Domino Assortment in Systainer
- SYSTAINER SYS 2-LOC

£775.00 INC VAT
£645.83 EXC VAT
FES 574429AV

SAVE OVER £177 WAS ~~£952.32~~

CARVEX PS420 EBQ-PLUS 550W PENDULUM JIGSAW - BODY GRIP

SAVE OVER £48 WAS ~~£318.00~~

£269.95 INC VAT
£224.96 EXC VAT
FES 561590

EHL65EQ 65MM ONE-HANDED PLANER & T-LOC SYSTAINER CASE

NEW

SAVE OVER £38 WAS ~~£273.60~~

£234.95 INC VAT
£195.79 EXC VAT
FES 574560

OF1400EBQ-PLUS 1/2" ROUTER WITH T-LOC SYSTAINER CASE

STAR BUY

SAVE OVER £54 WAS ~~£529.20~~

£475.00 INC VAT
£395.83 EXC VAT
FES 574345

FREE DELIVERY UK MAINLAND **ON ORDERS OVER £99*** (EXCEPT AS MARKED SEE OUR RATES OF CARRIAGE FOR MORE DETAILS)

73-81 HEATH ROAD TWICKENHAM MIDDLESEX TW1 4AW

CARRIAGE RATES UK MAINLAND

UP TO £99 - DELIVERY £8.95 • OVER £99 - DELIVERY FREE
*Orders over £99 & under 25kg next day £5 (Mon-Fri only)
Single items over 25kg and Machine carriage P.O.A.

ALL OUR INC VAT PRICES ARE CALCULATED AT CURRENT RATE OF 20%

Ref: 041301

On the desk

WORLDSKILLS HAT TRICK

Chichester College student and furniture maker George Callow is celebrating his successful selection for the 42nd WorldSkills Competition this year. This achievement will see George jetting off to Leipzig, Germany, this July with the UK team, to battle against other talented hopefuls in an attempt to scoop the coveted 'Gold' in the largest international skills event of its kind. George, the third student to represent the UK for the coveted title, marks an exciting hat trick for the College, as former students Luke Griffiths and Chris Wallace were involved in the competitions in 2009 and 2011. George, a former St Phillip Howard student, will take part in 22 hours of competition and will be judged on his level of skill, accuracy and speed in completing the tasks set. For more information, visit www.worldskills.org

WORKTOP MAGIC

Trend's KWJ700 kitchen worktop jig is made from hard-wearing solid laminate 12mm thick, and will enable both parts of a worktop corner joint to be cut in less than 15 minutes. It can handle worktops up to 700mm wide and 40mm thick, with or without a post-formed edge, and will also form 'dog-bone' style recesses to take worktop fixing bolts. It's priced at £106.80 and is available from Trend Routing Centres and stockists nationwide. For more information, call 01923 249911 or visit www.trend-uk.com

DIARY

MAY

Axminster Skill Centre courses
20 Hand tools
22 Spindle moulding
20-21 Beginners woodturning
23 Fine bowls
24 Turned boxes
28-29 Beginners routing
Check website for places available
Unit 10 Weycroft Avenue,
Axminster EX13 5PH
0800 975 1905
www.axminsterskillcentre.co.uk

John Boddy's courses
16-17 Woodturning: Simon Whitehead
01423 322370 ext 257
www.john-boddys-fwts.co.uk

John Boddy's demonstrations
11 Woodcarving: Brian Chapman
18 Woodturning: Simon Whitehead
Details as above

John Lloyd courses
20-24 Veneering & laminating
Bankside Farm, Ditchling Common
RH15 0SJ
01444 480388
www.johnlloydfinefurniture.co.uk

Orchard Woodturners
11 Richard Findley
Village Hall, Milstead, Kent ME9 0SD
01622 726532

Record Power Spring Shows
See website for details
Record Power, Unit B Adelphi Way,
Ireland Industrial Estate, Staveley
S43 3LS
01246 561520
www.recordpower.co.uk

Shropshire Association of Woodturners
22 Tony Bellamy
Bicton Village Hall, Bicton SY3 8E
01743 240661

Weald of Kent Craft Show
4-6 Penshurst Place, Kent TN11 8DG

West Dean College courses
10-12 Success with hand planes
26-31 Shaker chair making
West Dean College, Chichester
PO18 0QZ
01243 811301
www.westdean.org.uk

DUST BUSTER

DeWalt has just introduced its first M-class dust extractor, the DWV902M, featuring an innovative dual filter cleaning system. Each filter is automatically cleaned every 15 seconds, reducing clogging and delivering constant airflow performance, allowing the user to work safely for longer.

A built-in power take-off socket allows a power tool connection for automatic switching of the extractor with automatic start and stop control when the power tool is operated. The machine continues to run for an extra 15 seconds to allow all the dust to be cleared from the system.

Other features of the DWV902M include an audible alarm in the event of a drop in suction performance, and wet and dry pick up with variable suction control, which allows for the reduction of suction power if required.

For more information, call DeWalt on 0700 339258 or visit www.dewalt.co.uk

TWO YEAR WARRANTRY

Mirka is extending the warranty on all its sanders to two years to align with the company's commitment to maximise the durability of its products. It is also offering an additional year's warranty if the tool is registered on the Mirka website within 30 days of purchase.

Mirka's range of innovative sanders includes Ceros, its compact electric random orbital sander, offering superior versatility and performance in a lightweight package suitable for a variety of sanding tasks, from wooden surfaces to metallic finishes.

For full terms and conditions of the warranty procedure, visit the Mirka website www.mirka.com/warranty

NEW FROM TOOLTEC

CLICK 'N CARVE

FROM 2D IMAGE TO 3D MODEL IN MINUTES

- Works with Wood, ABS, Foam, Modeling Wax, Styrenefoam, Epoxy Tooling Board
- Easy to use software
- Ideal for the commercial, professional, enthusiast and educational sectors.

£1599.00 *plus VAT*

All you need to do is CLICK-CONVERT-COMMAND-AND-CARVE...

Call 01494 523991 **sales@tooltec.co.uk**
Fax 01494 524293 **www.clickNcarve.co.uk**

What's new from

'THE' TOOL SPECIALISTS • WWW.DM-TOOLS.CO.UK • 020 8892 3813

EHL65EQ-PLUS 65MM ONE-HANDED PLANER

MANUFACTURER: Festool
D&M PRICE: £234.95

The EHL65 planer was already the lowest and lightest one- handed planer in its class. Now the EHL65EQ further optimises, improves and enhances the ergonomics of the machine with a soft-grip handle, single-button operation and ergonomic ribs on the housing that allow it to be guided more effortlessly, both horizontally and vertically, with either both hands or just the left or right one. The adjustable 4mm planing depth and 23mm rebate depth utilise the spiral blade design to produce an outstanding surface finish.

DWS778 250MM SLIDING MITRE SAW

MANUFACTURER: DeWalt
D&M PRICE: £359

Built on the classic pull-saw design, the DWS778 has been improved and updated, and the 1850W motor is suitable for powerful cutting in all materials. Dust extraction is specifically designed to meet the needs of the professional user. The base and fence have been machined to meet the accuracy requirements of the most demanding applications. The new headlock function allows the head to be fixed, restricting the traverse function for trim applications and ease of transportation. It incorporates a sliding left-hand fence with measuring scale for improved material support and management, together with a compact internal rail design for huge cutting capacity in a highly transportable format. The XPS Shadow line cut indicator provides fast accurate alignment of the blade while illuminating the workpiece.

XPS CROSS CUT POSITIONING SYSTEM

DCR016/017 FM SITE RADIOS

MANUFACTURER: DeWalt
D&M PRICE: See our website for details

DeWalt are introducing a new site radio/charger in two models. The DCR017 features a DAB+/FM tuner, while the DCR016 is FM analogue only. Both models have a 3.5mm AUX port to connect your iPod or MP3 player, and accept and charge 10.8V, 14.4V and 18V XR Li-ion batteries. The DCR017 (illustrated) additionally has two AC power outlets on the right-hand end, and a Tech Box on the left-hand end that stores and protects your portable music device.

'THE' TOOL SHOW '13

WWW.THETOOLSHOW.COM

FRIDAY 4TH - SUNDAY 6TH OCTOBER 2013

Make a note in your diary now for our annual extravaganza, **'THE' TOOL SHOW 2013**, which takes place at Kempton Park Racecourse in Surrey. This is the UK's premier hand tool, power tool and woodworking machinery exhibition, and is your opportunity to see the latest tools and equipment demonstrated by all the leading suppliers. You can also pick up exclusive show deals and special offers, and both parking and admission are **FREE** for visitors. Visit www.thetoolshow.com for more details

PLEASE CHECK OUR WEBSITE WWW.DM-TOOLS.CO.UK FOR THE LATEST PRICES AND DEALS

BY ALAN HOLTHAM

To lead a better life...

You get used to lots of things in your workshop, some less perfect than others. After my hospital bed conversion, featured in the April 2013 issue of *The Woodworker*, I've been thinking about other ways to make my life easier

The adjustable-height assembly bench I converted from an old hospital bed has been a superb addition to my workshop facilities

The assembly bench I converted from an old hospital bed has since proved to be superb, **photo 1**. In fact, quite unexpectedly, it's now my bench of choice for a lot of jobs. Although not strong enough for heavy planing or chopping work, its instant height adjustment makes it a pleasure to use for most operations.

Stoop to conquer

However, even at its maximum height it's still a little low for some jobs where I need close-up vision. I highlighted this problem with my conventional bench some years ago when I was doing a lot of routing work, **photo 2**. Back then I came up with the idea of making a dedicated routing bench which has since proved to be invaluable, **photo 3**. Using this I no longer had to bend over the work at an awkward angle and everything was at a comfortable working height.

Sadly, the current major revamp of my workshop layout means that I don't have the space to accommodate this bench any longer. However, I was very reluctant to get rid of it after all these years of faithful service, and my back agreed!

Two benches in one

In a 'lightbulb' moment, I suddenly realised that I could combine its advantages with those of the new adjustable bench. A few minutes with a saw reduced its height by a couple of feet, **photo 4**, and it can now sit on the adjustable assembly bench. With this raised to its highest extent, the routing benchtop height is now back to where it was originally. Result!

It's not fixed down in any way. The feet just sit on the assembly bench, so when I need the full surface to work on, the router bench lifts off and stores on the floor at the

My old routing bench required me to adopt some very uncomfortable poses

The solution was to build a dedicated high-level bench, which worked well

As I had no room for it, I cut it down and stood it on the assembly bench

I screwed a vertical cramping board to the end of the new routing bench...

...so I could cramp long, wide boards securely to it while working on their ends

I use a lot of bench dogs – including a home-made one – and a holdfast

These dogs and a modified tail vice allow me to hold curved work securely

back of the adjustable one. What's more, I can now fine-tune the exact working height, so it's even better than before!

A simple modification

I also took the opportunity to make a small modification to the routing bench. Although there are plenty of cramping options, I've always found it difficult to hold wide boards so I could work on their ends. The problem lies mainly in providing plenty of support for the router when working on the narrow end grain. With this in mind I screwed a vertical cramping board to the end of the bench, making sure it was at precisely 90° to the top, **photo 5**. Now I can easily cramp boards upright, **photo 6**, and jobs like cutting sliding dovetail joints are now dead easy as the router is totally supported.

Going to the dogs

I use a lot of the Veritas bench dogs, along with a holdfast and a home-made wooden dog, **photo 7**. With this assortment I can hold virtually anything – even curved work – using a standard vice modified into a tail

vice and fitted with the home-made dog, **photo 8**. The wide overhang of the top makes it easy to cramp flat work anywhere, **photo 9**. This lack of overhang has always been an issue with normal benches that have a front apron, as cramping anything to the top is almost impossible.

Laying the dust

I also wanted to address the problem of dust extraction from my power tools. I have several vacuum extractors and the tools all have dust spouts, so why does it always seem such a chore to connect the two? As I'm basically quite lazy, the solution seemed to be to make it as easy as possible. I'm sure we're all guilty of thinking 'it's only a little cut', and so we don't bother with any extraction. Sadly these little cuts all add up, and before you know it you have a serious dust allergy.

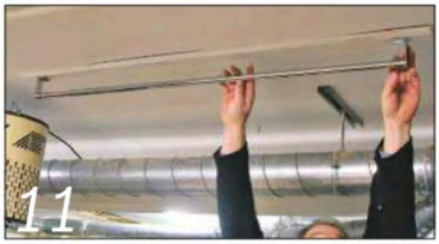
Avoiding snagging

The other more immediate problem is that the necessary hoses and cables always seem to get in the way, and the ribbed hoses in particular keep snagging on the benchtop, **photo 10**, restricting the tool's movement and frequently pulling it off-line.

I considered the idea of some form of recoil hose, but this seemed a bit over the top and was also highly expensive. I did find a free-standing arrangement from a well-known power tool manufacturer, but the cost of that was well into four figures. I'm a deep-pocketed Northerner, so I needed a budget solution!

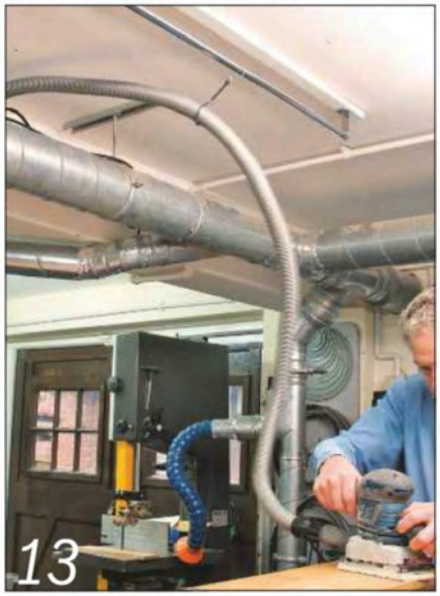
The wide overhang of the top makes it easy to cramp flat work anywhere on the bench

Ribbed extraction hoses can snag on the edge of the bench top, pulling the tool off-line



I created an overhead guide track using a length of metal wardrobe rail

To attach the hoses to the rail, I bought some bungee straps with hooks



This overhead arrangement worked perfectly, allowing the hose to move as I did

The Energy Cube can be hung on its chain from any convenient support

Hanging from the ceiling

The answer came in unlikely form from a TV cookery programme. I was fascinated to watch a chef reach up and take utensils off an overhead rail: perfect! A quick trip to our local DIY store yielded a long wardrobe rail and some hanging brackets which I fixed to a batten screwed to the ceiling above the bench, **photo 11**.

I now needed some flexible means of attaching the hose to the rail, so I scoured

It allows up to six power tools to be connected to the one outlet point (but beware of overloading)

The other end of its flex is plugged into my extractor's automatic socket

I've tie-wrapped its flex and hose together to keep them out of harm's way

The rail and bungee strap system allows me to keep flexes off the bench

This old air cleaner is mounted above the bench and collects lots of dust

It's powered from a wireless switch plugged into the inaccessible wall socket outlet

I can now turn the cleaner on from anywhere in the workshop using the remote control

eBay and eventually came up with some short rubber bungee straps with hooks attached, **photo 12**. Ten of them cost about £4, so there was no major outlay there.

A trial run proved I was on the right lines, with the hose kept well out of the way but still able to move freely over the length of the bench, **photo 13**. However, the power tool flex was still a bit of a nuisance, particularly as it was plugged into a socket outlet on the wall and I kept tripping over it!

Six steps to heaven

A recent shopping trip to an Axminster store resulted in an extensive haul of useful stuff, including an Energy Cube, **photo 14**. This is basically a six-way extension lead on a long suspension chain. With this also hung on the rail, it's now easy to access plenty of plug sockets without moving away from the bench, **photo 15**.

The other end of the extension lead is plugged into the automatic socket of my extractor, **photo 16**, which starts up as soon as I switch on any power tool connected to it. The extractor itself sits out of the way at the back of the bench, and I've tie-wrapped its flex and hose together to keep things neat and tidy, **photo 17**.

The beauty of this simple system is its flexibility. Everything moves easily about the bench, nothing pulls or snags, and additional bungees can be used to keep the spare power tool flexes up out of the way, **photo 18**. As it's now so easy to operate, I've become quite disciplined about using it with every power tool.

The air that I breathe

To complete my 'belt and braces' approach, I mounted an old air cleaner above the bench, **photo 19**. Judging by the amount of dust in the filter when I cleaned it out, this is extraordinarily efficient. Its main advantage is that it continues to work cleaning the air long after the extractor turns off. But once again this was not easy to use, as there's no on/off switch; I have to turn it on and off at the socket, which is awkward to reach.

Salvation came in the form of a wireless switch I'd picked up somewhere. This sits between the plug and socket, **photo 20**, and I can then turn it on and off from anywhere using the remote control switch, **photo 21**. I've since fitted this to the underside of the bench for instant access.

So all in all these have been major improvements in my quest to make my workshop safer and more user-friendly. I have one more extraction issue to tackle and then it's the 'big one': getting more storage! Watch this space…

Precisa 4.0 / 6.0 / 6.0 VR - professional precision sawbenches

Designed in Germany - Built in Germany - Tested in Germany

Scheppach technology has come a long way since making their first wooden framed circular sawbench in 1927, but three things remain constant to this day. German technology; German innovation and German quality control which is uncompromised in the new Precisa Series & Forsa panel sizing saws (not illustrated). Accuracy to within 1/10th millimeter is guaranteed. Component attachments can be removed and replaced where space is at a premium and without any sacrifice to accuracy or tooling required. Need something smaller? Then take a look at the scheppach Workshop Series. Whatever your requirement there is a scheppach sawbench to suit your work project, workshop space and budget. Scheppach - why consider anything less? **Call Allan on 01484 400 488 for a comprehensive demonstration.**

Precisa 4.0
Professional Series

Precisa 3.0
Workshop Series

Model	Product Group	Format (Other options available according to requirements)	Power kW / HP / Volts	Basic Specification Depth of cut @ 90° + max capacity on front of blade with STC + max width with TWE	Price Excluding VAT (Prices valid from 1st April 2013.)	Price Including VAT (Prices valid from 1st April 2013.)
Precisa 3.0 PACKAGE	Workshop	Inc STC - TWE & TLE (as illustrated)	2.6 / 3.5 / 240v 3.2 / 4.4 / 415v	90mm - 890mm & 1400mm	£1207.50	£1440.00
Precisa 4.0 PACKAGE 1	Professional	Inc 1.4m STC & TLE	2.6 / 3.5 / 240v 3.8 / 5.2 / 415v	87mm - 800mm	£1700.00	£2040.00
Precisa 4.0 PACKAGE 2	Professional	Inc 1.4m STC - TWE & TLE (as illustrated)	2.6 / 3.5 / 240v 3.8 / 5.2 / 415v	87mm - 800mm & 1100mm	£1900.00	£2280.00
Precisa 6.0 PACKAGE 1	Professional	Inc 2m STC & TLE	3.0 / 4.0 / 240v 4.8 / 6.5 / 415v	110mm - 1400mm	£2330.00	£2796.00
Precisa 6.0 PACKAGE 2	Professional	Inc 2m STC - TWE & TLE (as illustrated)	3.0 / 4.0 / 240v 4.8 / 6.5 / 415v	110mm - 1400mm & 1100mm	£2495.83	£2995.00
Precisa 6.0 VR PACKAGE	Professional	As above and as illustrated plus integral motorised pre scoring unit. Cannot be retro-fitted	3.0 / 4.0 / 240v 4.8 / 6.5 / 415v Scorer 0.8 kW	110mm - 1400mm & 1100mm	£2830.00	£3396.00

STC = Sliding Table Carriage. TWE = Table Width Extension. TLE = Table Length Extension.

Scheppach Workshop sawbenches are manufactured under strict quality control by scheppach engineers and quality control inspectors resident in China. They carry the same guarantee as German made machines. Scheppach machines have been sold & serviced by NMA in the UK since 1972. Go online and see what users say about NMA unprecedented after sales service.

NMA AGENCIES LTD
www.nmatools.co.uk
Birds Royd Lane, Brighouse, West Yorkshire, HD6 1LQ
Phone: 01484 400 488
Email: sales@nmauk.com

FREE 160 page 2013 Catalogue. Available on request.

BY PETER PARFITT

Shop companions

I replaced my old-fashioned trestles a couple of years ago, and have received a lot of interest in the new ones. They're very easy to make, especially when the Festool Domino is used for the jointing

It's difficult to imagine life without a pair of trestles. They can be moved around easily, used as a simple sawhorse to support sheets being cut, and set up as the base of a simple assembly bench. Everyone needs at least one trestle!

Over the years I've seen many trestles come and go. All of them were made in a hurry, often at a job site, and rarely with much thought about the design. When I decided to cut down my commissions away from home, I also looked carefully at my kit and made a few changes.

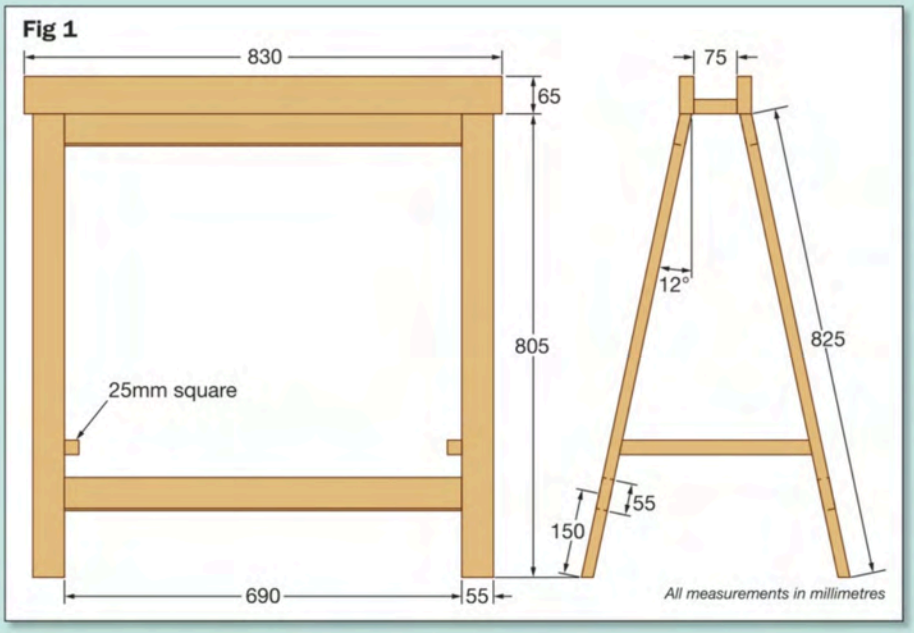
The various old trestles became firewood and I built a new pair of trestles that had replaceable sacrificial top inserts, **photo 1**, and could be folded when not in use. They're at the perfect height for breaking down sheet material.

I particularly needed a trestle to compliment my Festool MFT3 workbench, so I thought I'd use the same design and show you how it's made.

The design

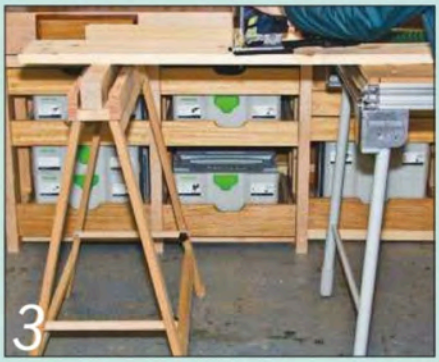
My original trestles were 775mm high, 950mm wide and had a leg angle of 15°. The new trestle, **fig 1**, needed to be 900mm high, including the sacrificial insert – the same height as my MFT3 bench – and I

Fig 1



The sacrificial insert in the U-shaped top extends the life of these trestles

Horizontal braces between the leg frames are essential for stability



The trestle is 900mm high with the sacrificial insert fitted this way round

Rotate the insert through 90° and it's perfect for supporting the MFT3 extension

The Festool Domino is a power tool that has revolutionised my joint making

If you don't have one, use simple glued and screwed butt joints instead

used a leg angle of 12° to keep the footprint reasonably small. The legs have horizontal braces held in place by a wood screw at one end and a removable threaded knob at the other, **photo 2**.

I also wanted the width of the new trestle to be slightly less than the old one, as it needs to match the 800mm width of the end of the MFT3. In all other respects the design and construction techniques are the same as my original trestles.

Adjusting the height

The trestle consists of a pair of leg frames which are hinged to a U-shaped top member into which the sacrificial insert is placed. I made this from 70 x 51mm section softwood. This allows it to be used in one orientation to make the trestle exactly 900mm high, **photo 3**. Then, when the insert is turned on edge, the trestle height drops to 881mm, allowing an mdf extension to the MFT3 to be supported, **photo 4**.

All the joints in the leg frames were made with the Festool Domino, **photo 5**, using a single 50 x 8mm loose tenon centred on each joint. If you don't have a Domino then it's quite reasonable to use a butt joint secured with a pair of screws and some glue instead, **photo 6**.

Preparing the stock

My original trestles are made from beech, but I didn't have enough stock for the new trestle so I selected some idigbo for the leg frames and pine for the top.

All the idigbo was planed to a 55 x 20mm section. The centre portion of the top is made from 75 x 25mm section and the sides measure 65 x 25mm, **photo 7**. I haven't created a cutting list as you'll probably want to change the overall dimensions slightly to suit your own requirements.

The leg braces are essential, as the hinges would otherwise tear out of the wood. I used a pair of 20mm square pieces of idigbo about 380mm long for these.

Getting the angles right

I started by cutting the four rails that form the leg frames, **photo 8**. They're 690mm long, and as there's no longitudinal splay the ends were cut at 90°. I then trimmed the foot end of each of the leg blanks at 12°, **photo 9**, but didn't attempt to trim the other end to length at this stage. It's necessary to know where the top of the leg will be, as this is used when marking out the centre lines for the Domino joints.

The top rail has to be positioned so its top edge can be trimmed at 12°, along with the legs, when the leg frames are finally cut

to length. The leg length can either be calculated from a drawing or done by a trial layout. I had calculated my finished leg length to be 825mm and was therefore able to scribe a line, at 12°, at the top of one of the legs, **photo 10**.

I had planned my joint so that 1mm of the top rail would be removed when the leg frame was trimmed at 12°. The rail stock is 55mm wide, so the joint will be at the 27.5mm mark. I then measured 26mm down from the upper part of the scribed line and marked a centre line across all four legs, **photo 11**.

Assembling the leg frames

I set the lower rails at 150mm from the bottom of the legs, but this isn't critical. Once all the centre lines had been scribed, I set up the Domino for cutting mortises 25mm deep and 10mm high using an 8mm cutter. The mortises in the ends of the rails either need a centre line to be marked before cutting, or can be cut directly with the aid of the Festool Trim Stop set for 55mm wide stock, **photo 12**.

The leg frames were then glued, cramped and left overnight to set, **photo 13**. If you go for the screwed butt joint there's no need to use cramps, but you'll need pilot holes for the screws to avoid splits.

Next, you can trim the leg frames at 12° using a circular saw, **photo 14**. This is a perfect job for a saw on a track, as otherwise there's too little width in the cross rail to support a freehand cut.

Making the top

The top section takes just a few minutes to make. I didn't use any glue on mine to make it easier to repair or adjust the design at a later stage. I drilled and countersunk clearance holes, four on each side, and then used 50 x 5mm screws to hold the sides to the bottom, **photo 15**.

I then laid the top upside down on my bench and positioned some cramps to support the leg frame at the correct angle while the hinges were attached, **photo 16**. These are just surface-mounted and are held in place with 20 x 4mm screws.

Adding the leg braces

Once the leg frames were in place, I laid the trestle on its side on the bench. I then marked the position of the first leg brace, measured the length of stock required, **photo 17**, and cut both braces.

I drilled a clearance hole for a 40 x 5mm round-head wood screw in one end, and a 6mm diameter hole in the other. After rounding over the ends a little I attached the first brace with the wood screw. I was then

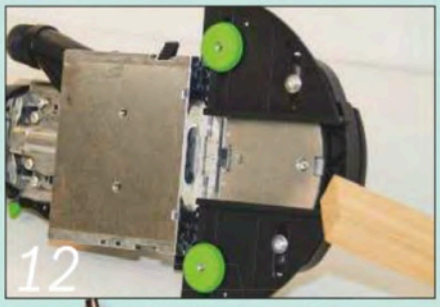
7 The pine and idigbo stock is dimensioned and ready to be cut to length

8 I always use a bench stop on my saw when I'm making repeat cuts

9 Use the saw again to trim one end of each leg to an angle of 12°

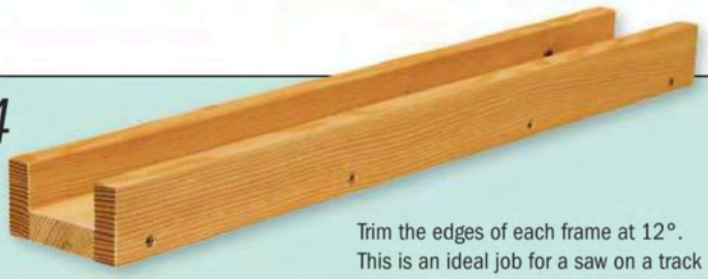
10 Work out the finished leg length and scribe a line (arrowed) at 12° at the top of one leg

11 Measure down from the scribed line to mark the centre line on all four legs



12 Set the Domino to cut the mortises. I used the Festool Trim Stop here

13 After cutting the mortises, assemble and cramp up the two leg frames



14 Trim the edges of each frame at 12°. This is an ideal job for a saw on a track

15 The top section is screwed but not glued together, to allow for future repairs

16 Support each leg frame with cramps while you hinge it to the top section

17 Lay the assembled trestle on its side so you can measure up the leg braces

18 Use a 16mm Forstner bit to drill a shallow recess so the insert will fit flush

19 Fit the screw inserts in their holes using either an Allen key or a hex driver

20 Glue and pin a softwood reinforcing pad to the outer edge of each foot

VARIATIONS ON A THEME

My original trestles were 950mm wide and had a finished height of 775mm, which I find comfortable for cutting up sheet material with my circular saw and guide rails. When you're working out your preferred height, don't go too low as this makes it more difficult to use the trestles for other purposes.

This design can also be used to make pairs of step trestles which have a series of rails, at even spacing, on which a plank or cross support can rest. Trestles like these need to be much narrower, say 500mm at most, and should have legs splayed at 8 to 10°.

21 Check the finished height so you can calculate the size of the sacrificial insert accurately

able to mark the position for the threaded insert which would go into the other leg. I used 6mm inserts from Screwfix (see below) which require an 8mm pilot hole.

Before drilling the pilot hole I used a 16mm Forstner bit to cut a shallow recess so the head of the threaded insert would sit flush, **photo 18**. I then switched to a 6mm drill bit and bored a hole deep enough to take the full length of the machine screw thread on my threaded knobs. I drilled the hole out to 8mm in diameter, but only as deep as was needed for the insert. The threaded insert is screwed home using either an Allen Key or a hex bit, **photo 19**.

Final touches

This procedure was repeated for the second brace; then the trestle was checked for stability on a flat surface. I wanted to protect the feet from damage, so I glued and pinned some backing pieces to the outside edges, **photo 20**.

My final task was to plane the sacrificial insert to size. I left this until last in order to get the dimensions exact. I set up the trestle next to my MFT3 and then measured the exact difference in height between the MFT3 and the channel in the trestle top, **photo 21**. This provided the larger dimension; the smaller was set at 19mm less.

FURTHER INFORMATION

Screw inserts (product code 59937)
- Screwfix
- 0500 414141
- www.screwfix.com

Threaded knobs (product code 953481)
- Axminster Tool Centre
- 03332 406406
- www.axminster.co.uk

The World's Best Router

triton®
Precision Power Tools

Dual Mode Precision Plunge Router

Designed by woodworkers for woodworkers, the **MOF001** has won many prestigious awards around the globe since its release.

Quiet, easy to control and simple to adjust, this compact machine is ideal for those looking for a router equally suited for hand-held and table-mounted use. The quick-fit pins allow rapid fitment to the mounting plate, making it the perfect companion for the Triton RTA300 router table.

EDITORS' BEST OVERALL CHOICE
TAUNTON'S TOOL GUIDE

Soft Start & Variable Speed provide the perfect speed for all cutter types

Single Wrench Bit Change through the base is achieved with the automatic spindle lock

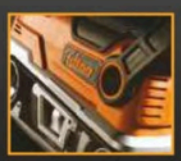
Safety Switch Shutter locks closed in bit-change mode to prevent power on

3-Stage Turret with direct reading scales for precise pre-set cut depths

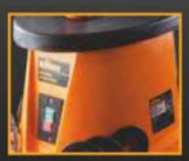
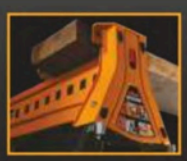
Push Button switches from plunge to fixed base router with rack & pinion

Micro Winder enables continuous fine depth adjustment through the full plunge range

PRECISION POWER TOOLS Since 1976 PRECISION POWER TOOLS





tritontools.com

NEW STORES
IPSWICH NOW OPEN
CATFORD NOW OPEN
CAMBRIDGE OPENS DEC

Machine Mart®

NOW 61 SUPERSTORES NATIONWIDE

WHERE QUALITY COSTS LESS

Clarke 4" BELT/ 6" DISC SANDER

CS4-6D

£84.99 EX VAT
£101.99 INC VAT

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

Clarke 6" BELT/ 9" DISC SANDER

CS6-9C

£219.00 EX VAT
£262.80 INC VAT

- Includes stand
- 1 Hp/ 230v/ 1ph motor

Clarke 1" BELT & 5" DISC SANDER

CBS1-5

- 5" dia. circular sanding disc runs at 2,800rpm
- 1" x 30" sanding belt operates at 13.5 metres/sec.

£59.98 EX VAT
£71.98 INC VAT

Clarke CONTRACTOR RANDOM ORBITAL SANDERS

INC 6 DISCS

CROS2

£49.98 EX VAT
£59.98 INC VAT

- For fast removal of paint or for fine swirl free finishing
- 6 x 150mm diameter sanding discs
- 4000-7000 rpm

evolution 255mm MULTIPURPOSE TABLE SAW

RAGE5

£274.99 EX VAT
£329.99 INC VAT

- Powerful 1800w/ 230v motor
- Max depth of cut (45°/90°) 55/79mm
- Includes TCT blade, mitre fence, wheel kit, folding stand, push stick, steel extensions
- Available in 110v & 230v

Clarke TABLE SAWS

CTS10D

LEG STANDS AVAILABLE FOR CTS11 - £21.99 EX VAT £26.39 INC VAT
CTS10D - £21.99 EX VAT £26.39 INC VAT

FROM ONLY £69.98 EX VAT £83.98 INC VAT

INCLUDES LEFT & RIGHT TABLE EXTENSION

*Moulded base

MODEL	MOTOR	BLADE	EX VAT	INC VAT
CTS800B	600w	200mm	£69.98	£83.98
CTS11*	1500w	254mm	£139.98	£167.98
CTS10D	1500w	254mm	£149.98	£179.98

Clarke CIRCULAR SAWS

GREAT RANGE IN-STORE

FROM ONLY £54.99 EX VAT £65.99 INC VAT

CCS-2

MODEL	MOTOR	MAX CUT 90°/45°	BLADE BORE DIA.	EX VAT	INC VAT
FURY	1200w	54/35mm	185/20	£54.99	£65.99
Clarke CCS-2	1300w	60/45mm	185/20	£64.99	£77.99
Makita 5704RK	1200w	66/46mm	190/30	£99.98	£119.98
Rage	1050w	54/35mm	185/20	£89.98	£107.98

Clarke SHEET SANDERS

FROM ONLY £14.99 EX VAT £17.99 INC VAT

CON300

MODEL	SHEET SIZE	MOTOR	EX VAT	INC VAT
COS200	190X90mm	150w	£14.99	£17.99
CON300	230X115mm	330w	£29.98	£35.98
Makita BO455	112X102mm	200w	£54.99	£65.99

Clarke RANDOM ORBITAL SANDERS

CROS1

£26.99 EX VAT
£32.39 INC VAT

- For sanding & polishing
- 125mm diameter sanding discs
- 4000-11000 opm

INC 5 DISCS

Clarke CONTRACTOR RECIPROCATING SAW

INCLUDES 3 WOOD & 3 METAL BLADES

- Multipurpose saw for cutting wood, board, metal pipes etc.
- Max. Depth of cut 210mm
- 850w motor

CON850

£47.99 EX VAT
£57.59 INC VAT

Clarke POWER PLANERS

Makita

- 82mm cutting width

FROM ONLY £24.99 EX VAT £29.99 INC VAT

CON1020

MODEL	INPUT POWER	DEPTH OF CUT	EX VAT	INC VAT
Clarke CEP1	650w	2mm	£24.99	£29.99
Clarke CON1020	1020w	3mm	£36.99	£44.39
Bosch PH020-82	680w	2mm	£64.99	£77.99
Bosch GH026-82	710w	2.6mm	£109.98	£131.98

Clarke ROUTERS

RYOBI trend

FROM ONLY £39.98 EX VAT £47.98 INC VAT

* DIY # PRO

MODEL	MOTOR (W)	PLUNGE (mm)	EX VAT	INC VAT
CR1C*	1200	0-50	£39.98	£47.98
Ryobi ERT1400RV#	1400	0-55	£87.99	£105.59
Trend T5# ‡	1000	0-50	£159.98	£191.98
DeWalt DW622K-GB# †	1400	0-55	£219.98	£263.98

PRICE CUTS! ‡ was £203.98 inc.VAT
† was £275.98 inc.VAT

Clarke DOVETAIL JIGS

- 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 Router not included

PRICE CUT NOW FROM £44.99 EX VAT £58.99 INC VAT WAS £59.98 inc.VAT

CDTJ24

MODEL	SIZE	EX VAT	WAS INC VAT	NOW INC VAT
CDTJ12	300mm	£44.99	£59.98	£53.99
CDTJ24	600mm	£84.99	£107.98	£101.99

RECORD POWER LATHES

CL3-CAM

- Cast Iron construction
- 36" Max between centres

LEG STAND FOR DML36SH £49.98 EX VAT £59.98 INC VAT

5 YEAR GUARANTEE

PRICE CUT NOW FROM £239.00 EX VAT £286.80 INC VAT WAS £299.98 inc.VAT

PRICE CUTS! * was £299.98 inc.VAT # was £514.80 inc.VAT SAVE £72!

MODEL	MOTOR (HP)	NO. TURNING SPEEDS	CAP OVER BED /OUTBOUND	EX VAT	INC VAT
DML36SH*	1/3	4	9"/12"	£239.00	£286.80
CL3-CAM#	3/4	5	12"/30"	£369.00	£442.80

Clarke ROTARY TOOL KIT

CRT40

£26.99 EX VAT
£32.39 INC VAT

Kit includes:
- Height adjustable stand with clamp
- Rotary tool
- 1m flexible drive
- 40x accessories/consumables

Clarke CONTRACTOR CR2 ROUTER

£109.98 EX VAT
£131.98 INC VAT

INCLUDES 15 PIECE ROUTER BIT SET WORTH OVER £20 INC VAT

- Powerful heavy duty machine ideal for trade use
- Variable speed control from 7,400-21,600 rpm
- 2100w motor
- 0-60mm plunge depth 1800w

CR3 Router with 15 Piece Bit Set also available only £89.98 £107.98

Clarke WORKBENCH

£79.98 EX VAT
£95.98 INC VAT

CWB1250B

- Robust steel workbench
- Extra thick, reversible plywood faced worktop
- Large lockable cabinet with storage shelves
- Tough steel drawer

Clarke NEW MULTI FUNCTION TOOL WITH ACCESSORY KIT

- Great for sawing, cutting, sanding, polishing, chiselling & much more
- 230-240v, 250w motor
- Variable speed 15,000 – 21,000 strokes/min

£36.99 EX VAT
£44.39 INC VAT

CMFT250

Clarke 13" MINI WOOD LATHE

£119.98 EX VAT
£143.98 INC VAT

CWL325V

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

Clarke ROUTER TABLE

Router not included

CRT-1

£54.99 EX VAT
£65.99 INC VAT

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

RYOBI ROUTER & TABLE KIT

ERT1400G Router

INCLUDES ROUTER

- 1400w power input
- 14,000-31,500rpm
- 1/4" & 3/8" collet capacity

ART03HG Router Table

£159.98 EX VAT
£191.98 INC VAT

- Table dims with extensions 355mm x 1010mm
- Mitre gauge
- Adjustable blade guard

Clarke BISCUIT JOINTERS

- 10,000rpm no load speed
- 600w motor
- 16mm max cutting depth
- 100mm cutting dia.

BJ600

£49.98 EX VAT
£59.98 INC VAT

Clarke STATIC PHASE CONVERTERS

- For use with bigger woodworking machines inc. saws, planers etc.
- Variable output power to match HP of motor to be run

ROTARY PHASE CONVERTERS ALSO AVAILABLE

CONVERT 230V 1PH TO 400V 3PH

PC60

FROM ONLY £229.00 EX VAT £274.80 INC VAT

MODEL	MAX. MOTOR HP	FUSE	EX 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

TACWISE NAILERS & STAPLERS

A range of professional Nailers from Tac-Wise

FROM ONLY £39.98 EX VAT £47.98 INC VAT

500EL

MODEL	TYPE	NAIL SIZE	EX VAT	INC VAT
181EL	Nail	10-35mm	£39.98	£47.98
191EL	Nail/Staple	10-35mm	£44.99	£53.99
400EL	Nail	15-40mm	£69.98	£83.98
500EL	Nail	20-50mm	£79.98	£95.98

Clarke HARDWOOD WORKBENCH

- Includes guide holes and bench dogs
- 2 heavy duty vices
- Large drawer for tool storage
- Dims: LxWxH 1520x620x855mm

CHB1500

£129.98 EX VAT
£155.98 INC VAT

Clarke LIGHTWEIGHT ALUMINIUM QUICK RELEASE ALUMINIUM SASH CRAMPS

FROM ONLY £6.99 EX VAT £8.39 INC VAT

MODEL	SIZE	EX. VAT	INC. VAT
CHT374	600mm	£6.99	£8.39
CHT375	900mm	£7.99	£9.59
CHT376	1200mm	£9.69	£11.63

Clarke JIGSAWS

Makita BOSCH Power tools

CJS380

FROM ONLY £14.99 EX VAT £17.99 INC VAT

*DIY #Professional

MODEL	POWER (W)	DEPTH OF CUT (WOOD/STEEL)	EX VAT	INC VAT
Clarke CJS380*	420w	55/6mm	£14.99	£17.99
Clarke CON750#	750w	80/10mm	£29.98	£35.98
B & D KS600*	450w	60/5mm	£33.99	£40.79
Bosch PST700*	500w	70/4mm	£45.99	£55.19
Makita 4329#	450w	65/6mm	£64.99	£77.99

Clarke BOLTLESS SHELVING BENCHES

- Simple fast assembly in minutes using only a hammer

FROM ONLY £29.98 EX VAT £35.98 INC VAT

ALSO EXTRA WIDE INDUSTRIAL UNITS AVAILABLE

QUANTITY DISCOUNTS
SAVE 10% WHEN YOU BUY ANY 5 PRODUCTS FROM THIS RANGE*

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

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

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

MODEL	SHELF DIMS WxDxH(mm)	EX VAT	INC VAT
150Kg	800x300x1500	£29.98	£35.98
350Kg	900x400x1800	£49.98	£59.98

Clarke PLANERS & THICKNESSERS

CPT600

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

*Max planing width 152mm

FROM ONLY £129.98 EX VAT £155.98 INC VAT

MODEL	MOTOR	MAX THICK. CAPACITY	EX VAT	INC VAT
CP-6	1100w	*	£129.98	£155.98
CPT600	1250w	120mm	£179.98	£215.98
CPT800	1250w	120mm	£199.98	£239.98

Clarke WOODWORKING LATHES

3 PCE CHISEL SET INCLUDED WITH CWL1000

CWL1000

SEE CATALOGUE FOR ACCESSORIES

MODEL	CENTRE TO CENTRE (mm)	TURNING CAP.	TURNING SPEEDS	EX VAT	INC VAT
CWL1000	1016	350mm	4	£106.99	£128.39
CWL12D	940	305mm	5	£199.98	£239.98

FROM ONLY £106.99 EX VAT £128.39 INC VAT

Clarke MORTISING MACHINE

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

CBM1B

- Accurately creates deep square recesses
- Table size 150 x 340mm
- Maximum chisel cap.76mm

CHISELS AVAILABLE FROM £6.99 EX VAT £8.39 INC VAT

MODEL	DEPTH OF CUT	EX. VAT	INC. VAT
Clarke CBM1B	95mm	£139.98	£167.98
Record RPM75‡	76mm	£179.98	£215.98
Record BM16 *	120mm	£249.00	£298.80

PRICE CUTS! ‡ was £263.98 inc.VAT
* was £311.98 inc.VAT

ORDER ONLINE

NOW OVER 13,000 PRODUCTS INCLUDING NEW Xtra

SPECIALIST PRODUCTS

LASER | BRITOOL EXPERT | FACOM

www.machinemart.co.uk

FREE CATALOGUE

Over 700 PRICE CUTS & NEW PRODUCTS

GET YOUR FREE COPY NOW!

- INSTORE
- ONLINE
- PHONE

0844 880 1265

Clarke DRILL PRESSES

- Tables tilt 0-45° left & right
- Depth gauge
- Chuck guards
B=Bench mounted
F=Floor standing

FROM ONLY £64.99 EX.VAT £77.99 INC.VAT

MODEL	WATTS/ SPEEDS	EX VAT	INC VAT
CDP5DD	250/5	£64.99	£77.99
CDP101B	245/5	£74.99	£89.99
CDP151B	300/5	£106.99	£128.39
CDP-10B	370/12	£159.98	£191.98
CDP301B	510/12	£199.98	£239.98
CDP451F	510/16	£239.98	£287.98
CDP501F	980/12	£429.00	£514.80

Clarke SCROLL SAWS

CSS16V

FROM ONLY £62.99 EX.VAT £75.59 INC.VAT

- 120w, 230v motor • 50mm max cut thickness
- 400-1,700rpm variable speed • Air-blower removes dust from cutting area

MODEL	MOTOR	SPEED RPM	EX VAT	INC VAT
CSS400B	85w	1450	£62.99	£75.59
CSS16V	120w	400-1700	£84.99	£101.99

Clarke DUST EXTRACTOR/ CHIP COLLECTORS

FROM ONLY £129.98 EX.VAT £155.98 INC.VAT

METABO ALSO AVAILABLE

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

MODEL	MOTOR	FLOW RATE	BAG CAP.	EX VAT	INC VAT
CDE35B	750w	850 M3/h	56Ltrs	£129.98	£155.98
CDE7B	750w	850 M3/h	114Ltrs	£139.98	£167.98

Clarke DUST EXTRACTOR CDE1000

- 50 litre tank capacity
- 183 m³/h flow rate
- 1100W input wattage

OTHER MODELS AVAILABLE

£99.98 EX.VAT £119.98 INC.VAT

Clarke BELT SANDERS

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

BOSCH Power tools

BS1

MODEL	WATT	M/MIN	EX VAT	INC VAT
Clarke BS1	900w	380	£29.98	£35.98
Bosch PBS7A	600w	250	£74.99	£89.99
Clarke CBS2	1200w	480	£69.98	£83.98
Makita 9911	650w	75-270	£92.99	£111.59

Clarke CORDLESS DRILL/DRIVERS

BOSCH Power tools PSR18

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

MODEL	VOLTS	BATTS	EX VAT	INC VAT
CCD180	18v	1	£36.99	£44.39
CCD240	24v	1	£46.99	£56.39
Bosch PSR18	18v	1	£68.99	£82.79

airmaster TURBO AIR COMPRESSORS

- Superb range ideal for DIY, hobby & semi-professional use

BIG 2HP 7.8CFM

CLARKE 8MM AIR HOSE FROM ONLY £5.99 EX VAT £7.19 INC VAT

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

STAPLE & NAIL GUN KITS HUGE RANGE IN CATALOGUE & ONLINE

MODEL	MOTOR	CFM	TANK	EX VAT	INC VAT
BT-AC200	1.5 Hp	6.2	24ltr	£79.98	£95.98
Tiger 8/44	2 Hp	7.8	24ltr	£114.99	£137.99
Tiger 8/64	2 Hp	7.8	50ltr	£164.99	£197.99
Tiger 9/24	2.5 Hp	8.7	24ltr	£149.98	£179.98
HUNTER 55	2.5 Hp	8.7	50ltr	£179.98	£215.98
Tiger 9/60	2.5 Hp	8.7	50ltr	£189.98	£227.98
AM17EC150	3Hp	14	150ltr	£419.00	£502.80

Clarke 12" CONTRACTORS SAW

INDUCTION MOTOR

CCS12

£239.00 EX.VAT £286.80 INC.VAT

- 1600w motor
- 315/30mm blade / bore diameter
- 90mm max cut depth at 90°

Clarke 16" VARIABLE SPEED SCROLL SAW WITH FLEXI DRIVE AND WORKLAMP

CSS400C

INCLUDES 64 PIECE KIT

- Parallel action arm design produces quick, accurate cuts in wood and plastic
- 50mm cutting depth • Flexible drive kit for additional grinding, polishing & sanding

£99.98 EX.VAT £119.98 INC.VAT

Clarke BANDSAWS

FROM ONLY £109.98 EX.VAT £131.98 INC.VAT

HUGE RANGE IN CATALOGUE & ONLINE

INCLUDES STAND

MODEL	MOUNT	MOTOR	THROAT	EX VAT	INC VAT
Clarke CBS190	Bench	350w	190mm	£109.98	£131.98
Clarke CBS250	Floor	370w	245mm	£179.98	£215.98

Clarke SPREADER CLAMPS

- Dual action spreader or compression clamp by simple head reversal • Quick release trigger for fast adjustment

CHT651

FROM ONLY £3.99 EX.VAT £4.79 INC.VAT

MODEL	CLAMP SIZE	EX. VAT	INC. VAT
CHT651	6"	£3.99	£4.79
CHT652	12"	£4.99	£5.99
CHT653	18"	£5.99	£7.19
CHT660	24"	£7.99	£9.59

Clarke MITRE SAW STAND - CUTS1

£76.99 EX.VAT £92.39 INC.VAT

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

evolution MITRE SAWS

Makita

RAGE3

- Quality range, ideal for cross, bevel & mitre cutting
- 45° tilting blade & table • Dust extraction system

FROM ONLY £119.98 EX.VAT £143.98 INC.VAT

MODEL	BLADE DIA.	BORE	MAX CUT DEPTH/CROSS	EX VAT	INC. VAT
Fury 3	210/25.4mm		60/200mm	£119.98	£143.98
Evolution Rage 3	255/25.4mm		75/300mm	£169.98	£203.98
Makita LS1040	260/30mm		95/130mm	£199.98	£239.98

Clarke 10" SLIDING MITRE SAW

- For fast, accurate cross, bevel & mitre cutting in most hard & soft woods
- 1800w motor
- 6000rpm

£129.98 EX.VAT £155.98 INC.VAT

CMS10S2

10" SLIDING MITRE SAW ON BASE

- For easy, precise and smooth cutting of wood parts • Carbide tipped saw blade
- Rotating table for precise angle cuts ranging between -52° and +60°

FROM ONLY £159.98 EX.VAT £191.98 INC.VAT

RT-SM430U

*Includes laser guide

MODEL	BLADE DIA/BORE	MAX. DEPTH OF CUT	EX VAT	INC VAT
RT-XM305U	250/30mm	75mm	£249.98	£299.98
RT-SM305L *	210/30mm	65mm	£159.98	£191.98
RT-SM430U *	250/30mm	75mm	£249.98	£299.98

BLACK & DECKER POWERFILE

£54.99 EX.VAT £65.99 INC.VAT

KA900E

- Great for hard to reach areas
- 13mm wide belt, 120mm long arm • 350w motor

Clarke WOODWORKING VICES

FROM ONLY £13.49 EX.VAT £16.19 INC.VAT

Record WV7

MODEL	MOUNTING	JAW (WIDTH/OPENING /DEPTH)mm	EX VAT	INC VAT
Clarke CHT152	Bolted	150/152/61	£13.49	£16.19
Stanley Multi Angle	Clamped	72/60/40	£16.99	£20.39
Record V75B	Clamped	75/50/32	£18.99	£22.79
Clarke WV7	Bolted	180/205/78	£24.99	£29.99
Clarke WV7QR	Bolted	180/205/80	£39.98	£47.98

Clarke BENCH GRINDERS & STANDS

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

- Stands come complete with bolt mountings and feet anchor holes

6" & 8" AVAILABLE WITH LIGHT

FROM ONLY £27.99 EX.VAT £33.59 INC.VAT

CBG8W features 8" whetstone & 6"drystone.
With sanding belt

MODEL	DUTY	WHEEL DIA.	EX VAT	INC VAT
CBG6RP	DIY	150mm	£27.99	£33.59
CBG6RZ	PRO	150mm	£37.99	£45.59
CBG6SB#	PRO	150mm	£49.98	£59.98
CBG6RWC	HD	150mm	£54.99	£65.99
CBG8RSC	HD	200mm	£59.98	£71.98
CBG8W (wet)	HD	150/200mm	£55.99	£67.19

VAC KING Earlex WET & DRY VACUUM CLEANERS

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

- A range of compact, high performance wet & dry vacuum cleaners for use around the home, workshop, garage etc.

* SS = Stainless Steel

MODEL	MOTOR	CAPACITY WET/DRY	EX. VAT	INC. VAT
CVAC20P	1250W	16/12ltr	£46.99	£56.39
WD1000	1000W	13.5/12ltr	£49.98	£59.98
CVAC20SS*	1400W	16/12ltr	£57.99	£69.59
CVAC25SS*	1400W	19/17ltr	£64.99	£77.99
CVAC30SS*	1400W	24/21ltr	£84.99	£101.99

Clarke PORTABLE THICKNESSER

- Max thickness capacity 130mm
- Planing depths adjustable from 0-2.5mm
- Powerful 1250w motor
- 8000rpm no-load speed

£179.98 EX.VAT £215.98 INC.VAT

CPT250

Clarke WHETSTONE SHARPENER

- Produces accurate razor sharp cutting edges on chisels, scissors, tools etc
- 120w motor
- Grinding disc dims: 200mm dia x 40mm x 12mm bore
- Wet bath

£99.98 EX.VAT £119.98 INC.VAT

CWS200

Clarke 6" BENCH GRINDER WITH SANDING BELT

£49.98 EX.VAT £59.98 INC.VAT

CBG6SB

- For sanding/shaping wood, plastic & metal
- Supplied with coarse grinding wheel & sanding belt
- Complete with tool rest, eye shield & wheel guard

Clarke CARVING CHISEL SET

£39.98 EX.VAT £47.98 INC.VAT

CHT400

- Polished spring alloy steel chisel blades • Supplied in wooden storage case with handle

QUALITY BEECH HANDLES

12 PIECE SET

VISIT YOUR LOCAL SUPERSTORE

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

*NEW STORES

BARNSLEY Pontefract Rd, Barnsley, S71 1EZ	01226 732297
B'HAM GREAT BARR 4 Birmingham Rd.	0121 358 7977
B'HAM HAY MILLS 1152 Coventry Rd, Hay Mills	0121 7713433
BOLTON 1 Thynne St. BL3 6BD	01204 365799
BRADFORD 105-107 Manningham Lane. BD1 3BN	01274 390962
BRIGHTON 123 Lewes Rd, BN2 3QB	01273 915999
BRISTOL 1-3 Church Rd, Lawrence Hill. BS5 9JJ	0117 935 1060
BURTON UPON TRENT 12a Lichfield St. DE14 3QZ	01283 564 708
CAMBRIDGE* 181-183 Histon Road, Cambridge. CB4 3HL	01223 322675
CARDIFF 44-46 City Rd. CF24 3DN	029 2046 5424
CARLISLE 85 London Rd. CA1 2LG	01228 591666
CHESTER 43-45 St. James Street. CH1 3EY	01244 311258
COLCHESTER 4 North Station Rd. CO1 1RE	01206 762831
COVENTRY Bishop St. CV1 1HT	024 7622 4227
CROYDON 423-427 Brighton Rd, Sth Croydon	020 8763 0640
DARLINGTON 214 Northgate. DL1 1RB	01325 380 841
DEAL (KENT) 182-186 High St. CT14 6BQ	01304 373 434
DERBY Derwent St. DE1 2ED	01332 290 931
DONCASTER Wheatley Hall Road	01302 245 999
DUNDEE 24-26 Trades Lane. DD1 3ET	01382 225 140
EDINBURGH 163-171 Piersfield Terrace	0131 659 5919
GATESHEAD 50 Lobley Hill Rd. NE8 4XA	0191 493 2520
GLASGOW 280 Gt Western Rd. G4 9EJ	0141 332 9231
GLOUCESTER 221A Barton St. GL1 4HY	01452 417 948
GRIMSBY ELLIS WAY, DN32 9BD	01472 354435
HULL 8-10 Holderness Rd. HU9 1EG	01482 223161
ILFORD 746-748 Eastern Ave. IG2 7HU	0208 518 4286
IPSWICH* Unit 1 Ipswich Trade Centre, Commercial Road	01473 221253
LEEDS 227-229 Kirkstall Rd. LS4 2AS	0113 231 0400
LEICESTER 69 Melton Rd. LE4 6PN	0116 261 0688
LINCOLN Unit 5. The Pelham Centre. LN5 8HG	01522 543 036
LIVERPOOL 80-88 London Rd. L3 5NF	0151 709 4484
LONDON CATFORD* 289/291 Southend Lane SE6 3RS	0208 695 5684
LONDON 6 Kendal Parade, Edmonton N18	020 8803 0861
LONDON 503-507 Lea Bridge Rd. Leyton, E10	020 8558 8284
LONDON 100 The Highway, Docklands	020 7488 2129
MAIDSTONE 57 Upper Stone St. ME15 6HE	01622 769 572
MANCHESTER ALTRINCHAM 71 Manchester Rd. Altrincham	0161 9412 666
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

OPEN 7 DAYS

3 EASY WAYS TO BUY...

IN-STORE 61 SUPERSTORES

ONLINE www.machinemart.co.uk

MAIL ORDER 0115 956 5555

19805

BY MARK CASS

The Frankfurt Kitchen

Fitting a kitchen sounds like a straightforward job, but this one was something else. Recreating an historic fitted and working kitchen from an unpromising collection of original bits and pieces was a real challenge

I'm always exhorting my students to do their best at every task they're presented with. As well as the personal satisfaction such a professional attitude can provide, there are often additional benefits to be garnered along the way.

A recent case in point for me was a day spent replacing beech flooring in a customer's smallest room. Despite the distinct lack of glamour associated with the job – or indeed pretty much anything positive, apart from the challenge of doing it – I gave it my best shot and left the house feeling pretty good… and not just with relief that it was over.

Investment return

A year or so later I got a call from the same customer, asking me if I'd be interested in installing an historic kitchen. With my background in antiques and a genuine regard for construction techniques and artefacts from the past, it didn't take me long to say yes. It was only when I'd started the job that I found out it was the quality of my work in the downstairs loo that had got me the gig!

Planning and design

After much searching, my clients had sourced an almost complete kitchen from Germany, and had acquired plenty of photos and archive material to assist in the rebuild. Despite the difference in basic geography – the original was designed in a square U-shape to fit into a rectangular space, while here we were working with a linear galley-style layout – we all agreed that it was more than possible to get a good result.

The surviving cabinets and worktop sections had suffered quite badly over the years

The main drawer bases were made in a variety of different ways

I fitted new drawer bearers where necessary, but kept other interventions to a minimum

In rebuilding the carcasses, the older timbers would be presented to the front of each unit

I followed the design of the original drawer handles in close-grained tulipwood

Taking stock

My first step was to take a detailed inventory of all the existing cupboards and cabinetry. This was made a little tricky, as much of the furniture was in store and I had to estimate its overall condition a bit. With some acrobatic tape work it was just possible to measure everything, and thus be able to make a start on planning the kitchen layout.

This took a few drafts as, just like a regular kitchen job, appliances and auxiliaries had to be considered, rejected, selected, found to be out of stock, then selected again. All I can say is that anyone planning a kitchen installation in the near future should definitely factor in a few likely delays in this department.

Picking up the pieces

While we had most of the kitchen intact, it was clear that one or two units would need more than just cosmetic work. Worst off was what had once been the sink unit. Although the original double sink was present and correct (stamped Heidelberg 20), the actual carcass had suffered badly at the hands of time and DIY. What remained was little more than one or two splintered boards held together by a pair of doors and a few coats of paint. With a view to rebuilding it, I set about sourcing some old pine that wouldn't look too wrong for the replacement carcasses and would match the thickness of the originals.

Regardless of their suitability for this job, there was never any question of using non-authentic materials as, bar a few runs and splashes, all the interiors had never seen paint, and anything less than plain, dingy pine would have looked out of place. I made a point of using as much as possible of the original kitchen fabric, gluing old bits on wherever possible. All that was left over when I'd finished could easily be fitted into a shoe box!

Cupboard love

With the sink unit re-built and news of the final cooker dimensions coming down the wire, I was able to start work on the last cupboard. With a little deft juggling it proved possible to use an unmodified original door, but it needed a dummy drawer front grafted onto it to fill the space above.

When it came to the interiors, only the wall cabinets had solid shelves. All the others featured a nifty slatted arrangement rather like duck-boards. At a time when manpower was relatively cheap, this must have saved loads of money on raw materials, as each shelf was made entirely from offcut scantlings.

Mix and match

As the job went on I realised that there was an interesting mix of materials involved, probably a result of expediency or of using whatever came to hand. This included a variety of softwoods, oak, beech, plywood and blockboard and, as a clever way of unifying all the different worktops, a thin linoleum surface.

I've used lino before for a kitchen worktop, and I must say that it makes for a very pleasant work surface. Because it's made of organic materials – including linseed oil – lino is non-allergenic, easy to keep clean and waterproof. Just don't leave anything too hot on it!

There was one original length of beech worktop that was a bit bowed and wavy, but we felt that the odd contour merely added to the overall charm. As it happened, the new worktop I made – also in beech – suffered an alarming outbreak of non-flatness at one point, and was never entirely true again either. Never mind: once the new black worktop lino was in place and the mitred beech edge trim had been applied, it all looked great together.

A little difficulty

As it turned out, the trickiest bit of laying the lino was the thin strip on the box drawer dresser unit. This had to be done on site after the two halves of the unit had been fixed together, and involved fitting a precisely sized lino rectangle within a lipped border. On a free-access worktop, you can go oversize and trim the edges down later. You can also use thin sticks to prevent the contact glue grabbing before you've got everything lined up. Not here: this was a one-chance deal. I got lucky, but I must admit that as the edges finally lined up I realised I was still holding my breath.

Goods in the bank

One of the key features in a Frankfurt kitchen was the bank of small aluminium dry goods drawers with their stamped ingredients labels and beautifully curved handles. These were nearly always retained when the rest of the kitchen was scrapped, and still turn up for sale here and there; my clients were already in possession of a little unit from the 1930s featuring a full set.

It may seem unlikely now, but they weren't universally popular with their original owners. People didn't like the suggested contents labels, and the drawers were at first located low down and within reach of small children. I was interested to note that of the two timber versions in the double row, one was in oak. It appears that the tannin in the wood presented

6 Routing a slope on one of the sides for the draining board

7 Remaking the slatted shelves, note spacer and pin gun for speed and convenience

8 Vintage blockboard makes up the dummy drawer front on this cupboard door

9 The kitchen gradually took shape as the various units were fitted into place

10 The original wall units featured a superb design for a sliding door mechanism

11 I brought in my classic glue pot to stick the replacement box drawer guides into place

HISTORICAL ASIDE

After the First World War, Germany experienced some extremely difficult economic times, and one of the measures designed to lift the country out of depression was an ambitious construction programme of affordable housing in the large cities. In Frankfurt, architect Grete Schütte-Lihotzky had been employed by the renowned town planner Ernst May to work on The New Dwelling, a compact apartment which could be built cheaply and would usher in a brave new world for its lucky occupants.

In 1926, Grete went on to design what is regarded as the forerunner to the modern fitted kitchen, a practical working arrangement which could be mass-produced on a limited budget. Thousands of so-called 'Frankfurt' kitchens were eventually installed across Germany, but very few survive today; most were scrapped in the 1960s and 1970s.

12

The original box drawers still have their stamped labels in German

13

There's lino to the left of the original sink, and a beech drainer and pull-out shelves to the right

14

The finished layout is a very satisfying recreation of the original Frankfurt kitchen of the 1920s

a considerable deterrent to flour weevils; less of a problem today, but nonetheless reassuring for the occasional baker.

Staying faithful

These metal drawers required no repair, although most of the drawer guides were missing or loose from the carcass. Trying my best to keep it all real, it was very pleasing to bring the scotch glue pot in one day to fix the replacements – fashioned from authentic offcuts – and very amusing to see the two house terriers intrigued by the hot and sticky smell.

I ended up making all the replacement door and drawer handles to the original designs. It's possible they may originally have been beech, but I chose some close-grained American poplar (also known as tulipwood) which painted up a treat.

The right track

My favourite units in this kitchen were the glazed wall cabinets. Astonishingly they had survived with their original glass intact, a state of affairs I was at great pains to preserve. Fortunately all the sliding doors lifted out with ease and, thanks to one of the most ingenious mechanisms I've ever encountered, ran sweetly in their tracks after the minimum of cleaning and surplus paint removal.

Home and away

Not surprisingly, restoring the old units in the workshop and remaking parts where necessary was the easy bit. Constructing the beech draining board, though nerve-wracking when it came to routing the drain grooves (one slip and you're done for), was also fairly straightforward, but the tricky stuff – as ever – was the site installation itself.

It's rare that things go entirely smoothly when it comes to tearing out an old kitchen and installing a new one, but all you can do is to try to be ready for whatever comes along. Communication with the customer and other trades is the real key to it all; that and keeping your fingers crossed.

Quick fit

Once the units were fitted in, the cooker could be hooked up and manhandled into its final position. Services were chased in and the walls made good. Then the sink was plumbed in and we were nearly there. All the cupboards were securely fixed, especially the wall units which had double fixings. The high-sided draining board was added, the newly lino'd worktops fixed in place, and before I knew it the job was finished. Despite one or two difficulties, this remains one of my favourite projects ever. Anyone else fancy a kitchen?

Triple Set: All good things come in three!

Palm sander
Delta sander
Random-orbit sander

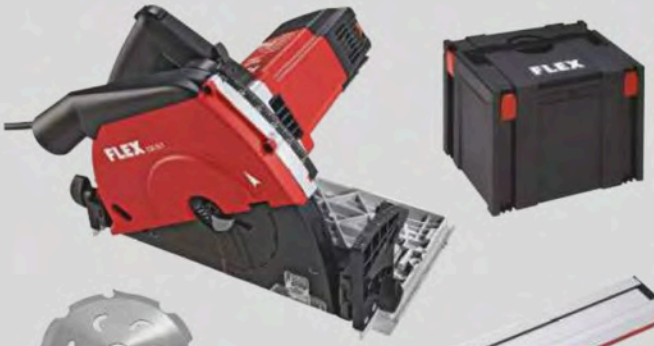
Ø 125 mm

- Sanding speed to suit the material due to speed control
- Ergonomically designed, handy grip cover with soft grip insert ensures a secure grip and good guidance
- Small and particularly light one-handed unit with excellent ergonomics
- Low-vibration
- Integrated dust extraction
- Possible to connect external dust extraction
- Long service life backing plate made of special tough material
- Especially suitable for overhead work

Standard equipment
Triple set OSE+ODE+ORE:
3 velcro backing plates
3 filter cassettes + 3 filter bags
Sanding paper SELECTFLEX
3 x 25 x P 80, 3 x 25 x P 120
1 Carry case TK-L BoB-2
1 Case insert

Order no. 398.373

The new plunge saw CSE 55 T for dry construction and wood cutting.



High quality Saw blade DIA Z4-S

Guide rail GRS 160

- No load speed 1700-3400 rpm
- Power input 1350 watt
- Blade Ø 160 mm
- Stepless speed selection, tachogenerator-controlled constant speed, overload protection, re-start inhibit and temperature monitoring.
- Dual clamped swivel element
- Swivel range from -1° to 48°
- Flip wedge for tear-free saw and plunge cuts without time-consuming removal of the riving knife
- Precise cutting depth adjustment by simply pressing on the cutting depth stop
- Dual clamped parallel stop prevents the saw from wandering
- Spindle lock: for quick replacement of blades
- Possible to connect external dust extraction

Standard equipment
CSE 55 T/DIA Z4+GRS160 Kit
1 Vacuum adapter
1 Saw blade DIA Z4-S
1 Systainer
1 Guide rail GRS 160

Order no. 388.300

VC 25 L MC. The „Small one" has powerful suction.

Wide-range accessories

- Rated power P.max. 1400 watt
- Max. volume flow 3600 l/min
- Max. vacuum 19000 Pa
- Container volume 25 l
- Capacity liquid 15 l
- Power take off 100-1800 watt
- Handy and compact vacuum cleaner
- With a high-performance turbine
- Manual filter cleaning
- Level monitor
- With appliance socket and electronic automatic switch on/off
- With accessories magazine
- Equipped with large wheels and two swivel guide rollers
- Features a filter bag made of highly tear-proof fleece for optimum filling

Standard equipment
Suction hose 32 mm Ø x 3.5 m with elbow
1 adapter Ø 27-32 mm
1 filter element class L/M
1 fleece filter bag class L
1 PP waste disposal bag
2x 0.5 m aluminium suction tube
1 crevice nozzle
1 combination floor nozzle, switchable
1 upholstery nozzle
1 round brush
1 suction pipe holder
1 accessories holder
1 cable/hose holder

Order no. 385.468

You need good tools to do good work

For FLEX it's the craftsman who sets the standard. That is why we visit those sites where tools are used when we develop new machines. On construction sites, in the shops and factories. And that's precisely where we determine the specifications that every FLEX must fulfil. Foremost this includes the proverbial longevity of our machines. Then their power and functionality. Also the design, the ergonomics, and the safety of a FLEX. And of course its advanced technology that always provides new solutions to problems, revolutionising the work procedures of entire industries. We are proven right by each of the millions of craftsmen who perform outstanding work using their FLEX every day. **www.flex-tools.com**

FLEX
Das Original

FLEX-Elektrowerkzeuge GmbH · PO Box 192 · Darlington DL1 9F · Phone +44 (0) 1325 741793 · Fax +44 (0) 1 915 045133 · Mobile +44 (0) 77 909 90682

Subscribe

today and save up to 30% off the shop price!

PLUS RECEIVE A FREE BOSCH 7 PIECE HOLESAW SET!

HURRY
Offer closes 31st May 2013

Set of 7 Bosch hole cutters for use in cutting diameters from 26 mm to 64 mm in wood, plasterboard and building boards.

- 7 hole cutters
- Diameter 26/32/39/45/51/58/64 mm
- For use in wood, plasterboard, building boards

Gift for UK print subscribers only, while stocks last

SUBSCRIBE TO THE PRINT SUBSCRIPTION PACKAGE AND RECEIVE:

+ **13 printed issues** delivered to your door
+ **FREE** Bosch 7 Piece Holesaw Set
+ **PLUS save up to 30%** off the shop price!
+ **PLUS** Exclusive discount on all orders at myhobbystore.co.uk

A Digital Only Package is also available

08456 777 807 quote ref. V420

www.getwoodworking.com/subscribe

Alternatively, you can complete the form below and return it, with payment, to the address provided

CODE V420

YOUR DETAILS:

Mr/Mrs/Miss/Ms..... Initial..... Surname.....

Address .....

.....

Postcode..... Country .....

Tel..... Mobile.....

Email..... D.O.B.....

THE PRINT SUBSCRIPTION PACKAGE – UK ONLY: SAVE 19%

☐ I would like to subscribe to *The Woodworker*, Print Package, for 1 year (13 issues) with a one-off payment of £39.50

THE PRINT SUBSCRIPTION PACKAGE – OVERSEAS:

I would like to subscribe to *The Woodworker*, Print Package, for 1 year (13 issues) with a one-off payment:

☐ Europe (inc Eire) £59.00 ☐ ROW Airmail £59.00

For all Canadian, North and South American subscriptions please call 001 877 363 1310 or go to www.expressmag.com

DIGITAL ONLY PACKAGE (UK AND OVERSEAS):

☐ I would like to subscribe to *The Woodworker*, Digital only Package, for 1 year (13 issues) with a one-off payment of £19.99

PAYMENT DETAILS:

☐ Postal Order/Cheque ☐ Visa/Mastercard

Please make cheques payable to MyTimeMedia and write code V420 on the back

Cardholder's name .....

Card no:

Valid from..... Expiry date.....

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

DIRECT DEBIT subscriptions (UK ONLY):

☐ I would like to subscribe to *The Woodworker*, Print Package, paying £8.50 every 3 months by Direct Debit. **BEST OFFER** SAVE 30%

Please complete form below and ensure you have completed 'YOUR DETAILS'

Instructions to your bank or building society to pay by Direct Debit.

Originator's reference 422562

DIRECT Debit

Name of bank .....

Address of bank.....

.....

..... Postcode .....

Account holder.....

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

Sort code Account number

Instructions to your bank or building society: Please pay MyTimeMedia. 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 MyTimeMedia and if so, details will be passed electronically to my bank/building society.

Reference Number (Official use only)

Please note that banks and building societies may not accept Direct Debit instructions from some types of account.

TERMS & CONDITIONS: Offer ends 31st May 2013. Subscriptions will begin with the first available issue. Please continue to buy your magazine until you receive your acknowledgement letter. Initial 12 month non-refundable contract applies. Refund requests must be in writing to the Publisher and will not be given on accounts with less than £20 credit. A £5 admin charge will apply and will be deducted from any refund. Refunds will only be given at the Publisher's sole discretion. *UK offer only. Should your subscription offer include a gift, please allow up to 60 days for delivery of your gift. Gifts are available while stocks last; we reserve the right to substitute the gift with items of a similar value. We will use the contact details supplied to communicate about your subscription. Your details will be processed by MyTimeMedia & The Woodworker in full accordance with all relevant UK and EU data protection legislation. MyTimeMedia & The Woodworker may contact you with information about our other products and services. If you wish to be contacted by MyTimeMedia & The Woodworker please tick here: Email ☐ Post ☐ Phone ☐. If you wish to be contacted by carefully chosen 3rd parties, please tick here: Email ☐ Post ☐ Phone ☐.

SEND TO: THE WOODWORKER SUBSCRIPTIONS, TOWER HOUSE, SOVEREIGN PARK, MARKET HARBOROUGH, LEICS LE16 9EF

BY ROGER BERWICK

Showing off

There's an old saying that you should never do work for your friends or family. However, I don't subscribe to that as most of my work comes my way via personal recommendation, and this simple commission was no exception

A friend mentioned to me recently that his mother collected china figurines and had been looking for a suitable wall-mounted glazed cabinet to display them safely. However, they hadn't been able to find one of the right size to accommodate the collection, and they wanted it in oak to match their existing living-room furniture. Needless to say, I offered to help.

The design was quickly agreed. The cabinet was to be mounted above a sideboard, and would be about a metre wide, 700mm high and 180mm deep. It would have two glazed doors with arched top rails, and of course was to be made in European oak…

The build begins

The main carcass of the cabinet was to have the top and bottom edges protruding 25mm from the carcas edge, with a fielding tapering away from the sides for appearance, **fig 1**. The glazed doors would then conceal a pair of glass shelves on adjustable shelf supports, enabling their position to be varied as required.

I'd just finished another commission in oak, and had a couple of wide board off-cuts left over that would be ideal for this project. I ripped one down on the table saw to provide the basic carcass components before thicknessing them down to 20mm for the top and bottom and 19mm for the sides.

Fielding first

I'd decided to tenon the carcass sides into the top and bottom, but first these two panels needed fielding to taper their edges away from the carcass sides and doors and give a more appealing appearance to the finished cabinet.

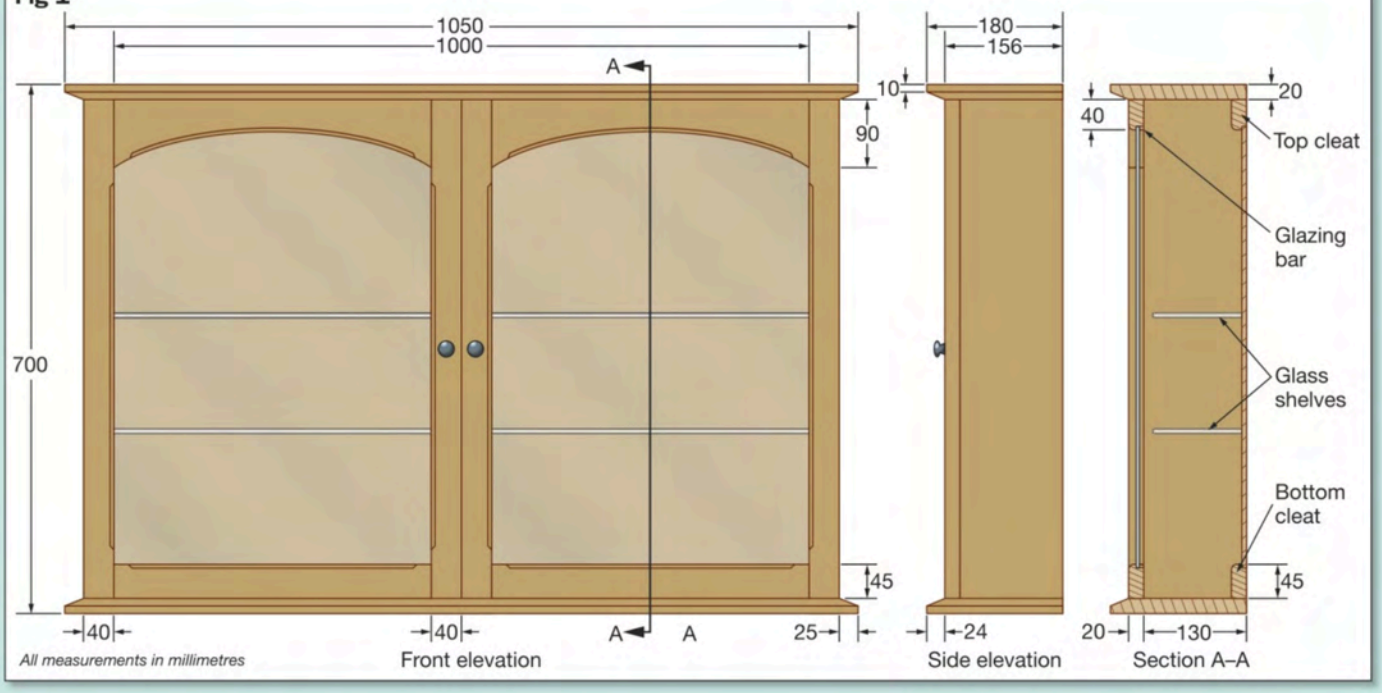
I applied the appropriate profile using the spindle moulder, **photo 1**, having initially given the TCT cutting edges a quick sharpen with a diamond stone to ensure that the cut provided was crisp and clean at the corners. You could of course do this on a router table if you don't have a spindle moulder.

Rounded mortises

Next I needed to cut mortise holes through the ends of the top and bottom panels, just inside where the fielding had been cut, so the tapered profile would feed smoothly into the cabinet sides.

You may have been wondering why I thicknessed the sides to 19mm while leaving the top and bottom panels at 20mm. It was

Fig 1



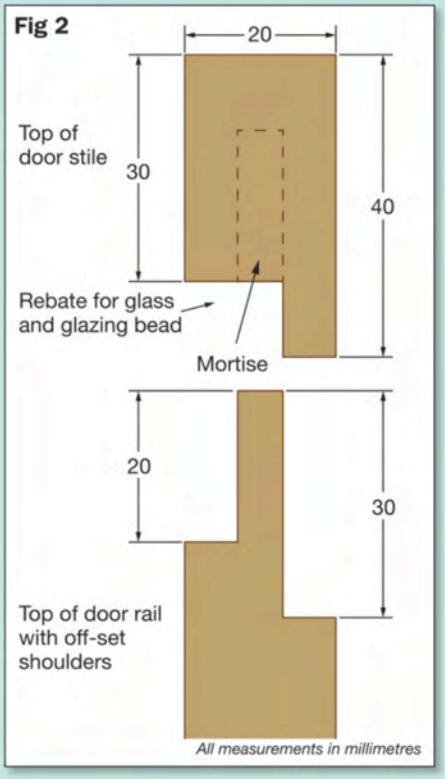
DISPLAY CABINET CUTTING LIST

All dimensions are in millimetres

Part	Qty	L	W	T
Top	1	1050	180	20
Base	1	1050	180	20
Side	2	700	180	19
Top cleat	1	1000	40	20
Bottom cleat	1	1000	45	20
Door stile	4	700	40	20
Door top rail	1*	1000	90	20
Door bottom rail	1*	1000	45	20
Back (plywood)	1	1000	700	6

* Each length provides two rails with continuous grain pattern.
All dimensions include an allowance for joints where required.
You will also need 4mm toughened glass panes for the doors and 6mm toughened glass for the shelves, which rest on adjustable shelf pegs.

Fig 2



I fielded the edges of the top and bottom panels using the spindle moulder

The rounded mortises in the top and bottom panels were cut using the router

I cut the tenons on my WoodRat and chiselled their ends to match the shape of the mortises

because I intended to cut the mortises using a 19mm router cutter, taking passes from either side of the board to prevent breakout on the surfaces, and then to cut matching tenons on the ends of the sides.

I set the side fence on the router to the correct position, crampeed the board to the bench and made plunge cuts to deepen each mortise hole until the mid-point was reached. I then turned the board over and repeated the procedure until the cuts met in the middle, leaving round-ended holes at each end of each piece, **photo 2**.

Traditionally I'd have squared off the mortises, but instead decided to round the tenon edges. After forming the tenons on my WoodRat, I trimmed them to shape with a sharp chisel, cutting down the grain, **photo 3**.

Testing the fit

With the joints cut, I did a dry assembly to make sure that the carcass fitted together snugly, **photo 4**. At this stage I also measured up for the two cleats at the rear of the carcase through which the wall fixing screws would be driven later, and cut them to length. The cleats were then biscuit-jointed to the top and bottom panels.

To reinforce the through tenons, I decided to wedge them from the outer faces of the carcase. I cut slots with the bandsaw down the length of the tenons, and prepared some small ebony wedges to fill them.

Coming together

With all the components ready it was time to assemble and glue up the carcase. I placed a couple of sash cramps at each end to pull the joints tight, and tapped in the glued wedges, **photo 5**.

When using wedges like this you need to taper the outer edges of the mortises slightly, and cut the wedges with only one tapering face, which is positioned facing to the outside of the tenon to force it out against the tapered side of the mortise.

Once the joints were cured, I cut off the waste from the wedges with a Japanese saw and planed them flush with a sharp block plane, **photo 6**. The carcase was then set aside to await its doors, **photo 7**.

Traditional doors

I always like to make glazed doors in the traditional way by rebating the frame components first and then off-setting the shoulders of the tenons in the upper and lower rails to marry up with the rebated surfaces. **Fig 2** shows the assembly in detail. Doing this it way avoids having to square off the corners of the rebate if this is cut with a bearing-guided router cutter after

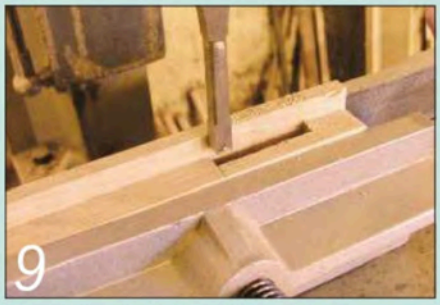
A dry assembly allowed me to check the fit and cut the two cleats accurately to length

I bandsawed slots in the tenons and tapped a small glued ebony wedge into each one

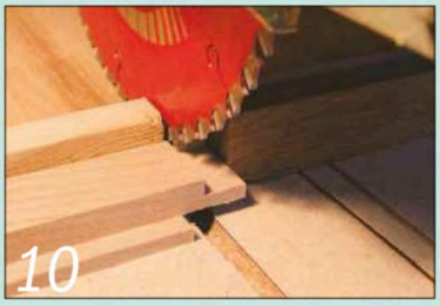
I trimmed the wedges flush with a Japanese saw and planed them smooth

The two rear cleats were biscuit-jointed to the top and bottom panels

I cut rebates in the door rails and stiles on the router table before assembly



The mortises in the door stiles were cut flush with the face of the rebate



I cut the offset tenon shoulders on the radial arm saw; you can do it by hand if you prefer

I then cut the tenon haunch on the bandsaw; once again, you can use a tenon saw instead

The finished tenon on the end of each door rail should look like this; see also fig 2

After preparing the tenons, I cut each curved top rail to shape on the bandsaw

I then rebated the inner face of each curve with a bearing-guided cutter

I routed out a rebate to accept the plywood back panel and squared off the corners

After profiling the edges of the door frames, I hinged them onto the carcase

the frame is assembled.

I rebated each of the door components except the arched top door rails on the router table, **photo 8**. I then cut the mortises in the stiles, aligning the hollow chisel to the back of the rebate I cut earlier, **photo 9**.

Grain continuity

You will see from the cutting list that the timber for the door rails is listed as a single length. I like to see continuity in the grain running from one door to another, so I mark the single length centrally before cutting it into the two components. I then label the matching ends to ensure that they come together when the doors are assembled.

I removed the cheeks of each door rail tenon using the radial arm saw, **photo 10**, ensuring that the shoulders were left at a different length on each face to tie in with the rebates on the door stiles. I then used the bandsaw to form a haunch on each tenon, **photo 11**. The finished rail tenon is shown in **photo 12**.

Creating curves

The top rail required a curved lower edge, but I cut the tenons first while the edges were still straight before cutting the curve on the bandsaw, **photo 13**. I finished each rail with a spokeshave, followed by a pass on the bobbin sander.

Finally, the inner face of each curve was rebated using the bearing-guided cutter to follow the curve, leaving them ready for assembly, **photo 14**.

I used a plywood template to drill the holes for the adjustable shelf support pegs

Recessing the back panel

As the bearing-guided rebate cutter was in the router, I adjusted the depth of cut to 6mm and then ran this round the back of the cabinet carcass to leave a rebate on the sides and cleats, **photo 15**, ready to accept the veneered plywood back panel.

The cutter leaves rounded corners. The corners of the back panel could be rounded to match, but it's tricky to do this accurately and I prefer to square off the corners of the rebate instead, using a corner chisel. Then the plywood panel can be back cut square to fit the recess.

The cabinet awaits glazing after being finished with oak stain and lacquer

Final details

Once the doors were dry, I cleaned them up and rounded over the outer edges of the door stiles with an ovolo cutter to take away the sharpness where the door stiles met the carcass. I also stop-chamfered the inner edges of the frames to lead the wood into the glass.

Completing the cabinet

Having hinged the doors and fitted the plywood back panel, the construction was now complete, **photo 16**. As the cabinet was to have a pair of toughened glass shelves, all that was left to do was to drill the 5mm locating holes for the push-in shelf supports.

I always drill these once the cabinet is complete and polished. I make up a pre-drilled plywood template and place this on top of the cabinet side. I then drill the support holes through the holes in the template with a depth stop fitted on the drill bit, **photo 17**. The plywood template prevents any breakout on the cabinet side, and also avoids the risk of the depth stop marking the surface of the wood.

Racing to the finish

It was now time to turn my attention to the finish. My client wanted the cabinet to match their existing furniture, which had a medium oak stain. I carefully stained each component including the back panel using Chestnut medium oak spirit stain, and once it had dried I sprayed all the surfaces with a clear satin pre-catalysed lacquer. This was subsequently de-nibbed with Webrax and over-waxed with a medium oak coloured furniture wax to give a good natural sheen as well as a durable finish, **photo 18**.

The last job was to fit the glass panes in the doors. These were secured in their rebates with slim oak glazing beads. I made the curved beads for the top rails from the bandsaw offcuts (see **photo 13** again), and pinned them all in place. I then added the door knobs and a pair of small magnetic catches.

Time for the hanging

I'd ordered the 6mm thick toughened glass shelves at the same time as the glass for the doors, and with the cabinet complete I delivered it to the client and mounted it on the wall above their sideboard. The screws passed into their wall plugs through clearance holes drilled in the upper and lower cleats, and provided a very secure fixing. Then the shelves were positioned on their supports pegs and the china collection was put on display.

Hammer®
The obvious choice!

Silent POWER

Incredibly quiet

The new Silent-POWER® Spiral Cutterblock.

More product highlights available to view online
www.felder-group.com/Silent-Power

▶ Details online

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

FELDER-GROUP UK
Unit 2, Sovereign Business Park, Joplin Court
Crown Hill, MK8 0JP MILTON KEYNES
Tel. 01908 635 000, Fax 01908 307000
info@ukfelder.co.uk

www.ukhammer.co.uk

Request your free catalogue now!

A3 26
Planer-Thicknesser

N4400
Bandsaw

HAMMER
Quality and precision from
AUSTRIA

BY ANDY KING

Sharpening machines

To have the edge as a woodworker, you have to have the edge! Any tool or machine that relies on a cutting action to do its job isn't worth the metal it's made of if it's blunt, and everyone knows that a blunt tool is a dangerous tool to use

Being able sharpen your edge tools and machinery knives quickly and efficiently isn't a dark art; nor does it need a huge array of kit. There are countless aids available, from hand jigs through to shop machines, and it's those machines that are under scrutiny here.

You can separate them into two broad categories – the dry grinders and the wetstone grinders – with each having its own particular strengths and weaknesses.

1 Budget grinders often come fitted with a basic grey carborundum wheel

2 Different stone compositions have different colours, including white and pink

3 Cheaper grinders have basic tool rests, ideal for straightforward jobs

4 A competent user can shape turning tools by working freehand...

5 ...but jigs are better for getting repeat accuracy on shaped profiles

DRYSTONE GRINDERS

These machines are often associated with the engineering and metalwork side of things. The dry grinders of old were much of a muchness, with only the wheel diameter and grit grading varying. Now there are numerous different composites for the wheels, each having attributes better suited to certain grinding roles.

Nil carborundum

Most older and cheaper dry grinders are likely to have a grey carborundum wheel, **photo 1**. While this is suitable for general-purpose grinding tasks, the combination of a fast grinding speed and the composition of the wheel means things can quickly overheat, and on edge tools made from high carbon steel this can be disastrous as the temper will be drawn and the tool will no longer retain an edge.

White is right

The need for a stone that cuts with less chance of the steel overheating has given rise to aluminium oxide composites in a variety of colours, with white (**photo 2**), pink and ruby stones commonly found on grinders sold specifically for sharpening woodworking tools.

The bond of the grit within a stone is described as friable, meaning that it breaks away under pressure from the tool placed against it, exposing a fresh new cutting surface as it wears. Aluminium oxide stones are softer and more friable than standard carborundum wheels, which are prone to glazing with prolonged use.This means that they run and cut cooler and the risk of bluing edge tools is lessened.

A tinge of pink

The white stones are good for sharpening carbon steel tools, but not so good for high-speed steel ones. The profiles of gouges in particular means there's minimal metal in contact with the wheel, and the localised pressure can wear the stone quickly and make ruts in the surface.

A harder composition is favoured for this sort of grinding, which is where the pink and ruby stones come in. Chromium oxide is added to the grit mix to give it a pink or ruby tinge, and the more that's added, the deeper the colour and the tougher the grit. The wear factor of localised pressure is lessened, but you'll still find you have to dress a wheel once in a while to true up and flatten the surface. Specialist tools are available for this job.

Supporting the blade

Most grinders have quite rudimentary tool rests, **photo 3**, so the grinding of a fresh edge is somewhat tricky unless you opt for add-on rests to achieve the consistency you need. For sharpening simple tools such as chisels and planes, the basic tool rest is undoubtedly sufficient, as you only have to draw the tool across the wheel while it's sitting on the rest.

Turning tools are a little more involved to sharpen, as there are sweeps, curves and bevels to contend with. The competent turner is often capable enough to work these profiles freehand using just the basic rest on the grinder, **photo 4**, but if you need consistent replication it's worth investing in some form of jig, **photo 5**.

1 Dry-grinding steel needs constant quenching to prevent edge bluing

2 All vertical wetstones come with a jig for straight-edged blades

3 Top-end models have jigs available for specialist jobs such as tackling drill bits

4 You can alter the stone to give a faster or finer cut with a grading stone

5 Polishing on a leather wheel can give the ultimate edge on your tools

6 Shaped wheels are also available on some models for profiled blades

VERTICAL WETSTONE GRINDERS

If you value your edge tools, the retention of the temper of the steel is essential. However, even with the cooler-running coloured wheels a fast grinder won't guarantee this; as the blade's edge gets closer to a feather, the easier and faster it heats up. Constant quenching in water helps minimise the risks, **photo 1**, but it's far too easy to go too far and ruin a carbon steel edge tool in that extra fraction of a second.

Just add water

Slow running wetstone grinding is the way forward if you want to avoid the risk of overheating your blades. There's the added bonus of gaining almost surgically sharp edges with some of the systems available, as they offer both grinding and honing within the same unit.

Top of the tree in this area is the Swedish-made Tormek. This has been available in various models over the years, but all stick to the tried-and-tested format of a wet wheel running in a water trough, and a leather wheel on the other side to hone the freshly dressed edge.

The most basic edge tools such as chisels and plane irons can be re-ground, dressed and honed with the basic set-up, **photo 2**, but it's a system that can expand as required to meet your needs.

Jigs for jobs

A series of different jigs can run on the toolrest, and by altering the jig's position on the machine as well as its proximity to the wheel, any grinding angle can be replicated. As you move into different areas of woodworking, be it turning, carving or even green woodworking and whittling, there's a jig that will dress and hone the tools.

More specialist tasks, including sharpening spindle moulder knives, planer knives and twist drills, **photo 3**, are all within its remit, but each particular requirement needs an accompanying jig to achieve it. This will prove costly, but the consistency the jigs afford will ensure that your tools will always be in good order.

Slow and steady

With a speed far slower than a bench grinder the cut is more laborious, so a deeply nicked blade will take a while to get back to a clean edge. However, the stone's surface can be altered using a stone grader, **photo 4**, giving the surface a coarser cut as needed before regrading it back for finer work. Ultimately it's the controllable cut that's where the value is. These machines also become a complete grinding and sharpening system when the leather wheels are brought into play.

The flat leather wheel will work with any flat tool, **photo 5**. The profile wheel available as an optional extra quickly hones and polishes any shaped tools such as gouges and 'V' tools, so carvers and turners will gain ultra-fine edges from it, **photo 6**.

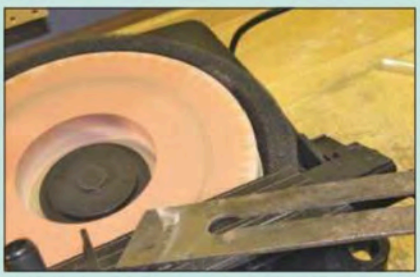
HORIZONTAL WETSTONE GRINDERS

If you're really desperate for a flat-grind bevel, then a horizontal grinder is the answer. This is best suited to flat blades – plane irons, chisels and the like. There are several similar machines out there, usually having a wide magnetic toolrest, **photo 1**. A small mitre fence gives more scope for working skewed irons and chisels, **photo 2**.

The wider toolrest also proves useful for sharpening planer knives. Although some vertical wetstone grinders have a jig capable of doing this, the horizontal ones can usually manage without the additional outlay for a dedicated jig.

The horizontal wetstone grinder isn't as quick as the vertical type, and any deep nicks will take some time to remove. However, the stones are that bit softer and finer, giving a more polished finish to any bevel you work.

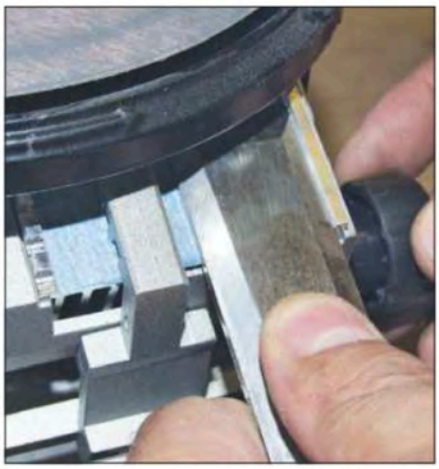
There's usually less mess involved with horizontal grinders, compared to the vertical type where the water inevitably drips outside the trough as you move the tool across the wheel. Here the stone is drip-fed a continuous supply of water from a reservoir, **photo 3**, which sucks up the water from the catchment pond and replenishes itself as you work.



1 Horizontal grinders have a magnetic tool rest that tilts to suit the grind angle

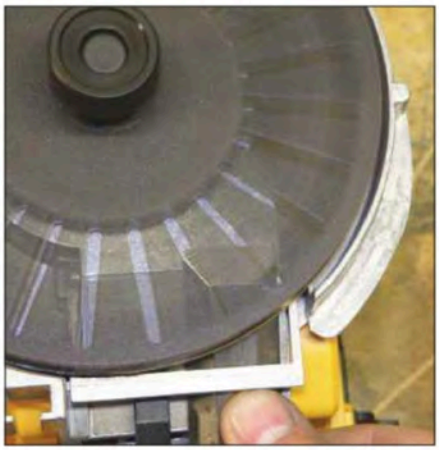
2 They also have a basic mitre fence to set the blades to specific skews

3 A reservoir with adjustable flow keeps the stone wet during grinding



1 The Worksharp system has an adjustable angle setter for sharpening basic tools

2 Wider blades such as plane irons can be worked on the top of the platen



3 Its slotted wheel lets you see profiles on the underside as you work

4 The advantage of a dry abrasive belt is that the resulting bevel is flat

GRINDING ALTERNATIVES

If you're an avid hand honer and follow the various methods available, the term 'Scary Sharp' will be familiar. The Worksharp system is basically a motorised version of that. It consists of a flat round glass platen with a range of abrasive discs ranging from 80 grit for grinding work through to 6000 grit for a polished razor-sharp edge.

Standard chisels and plane irons are fed to the underside of the platen, **photo 1**, while blades with wider profiles are sharpened on the top side, **photo 2**, so you can have different grits on either side. It's a slick operation to change the platen, making it a perfect workshop tool for those wanting the ultimate edge, done at speed and without fuss.

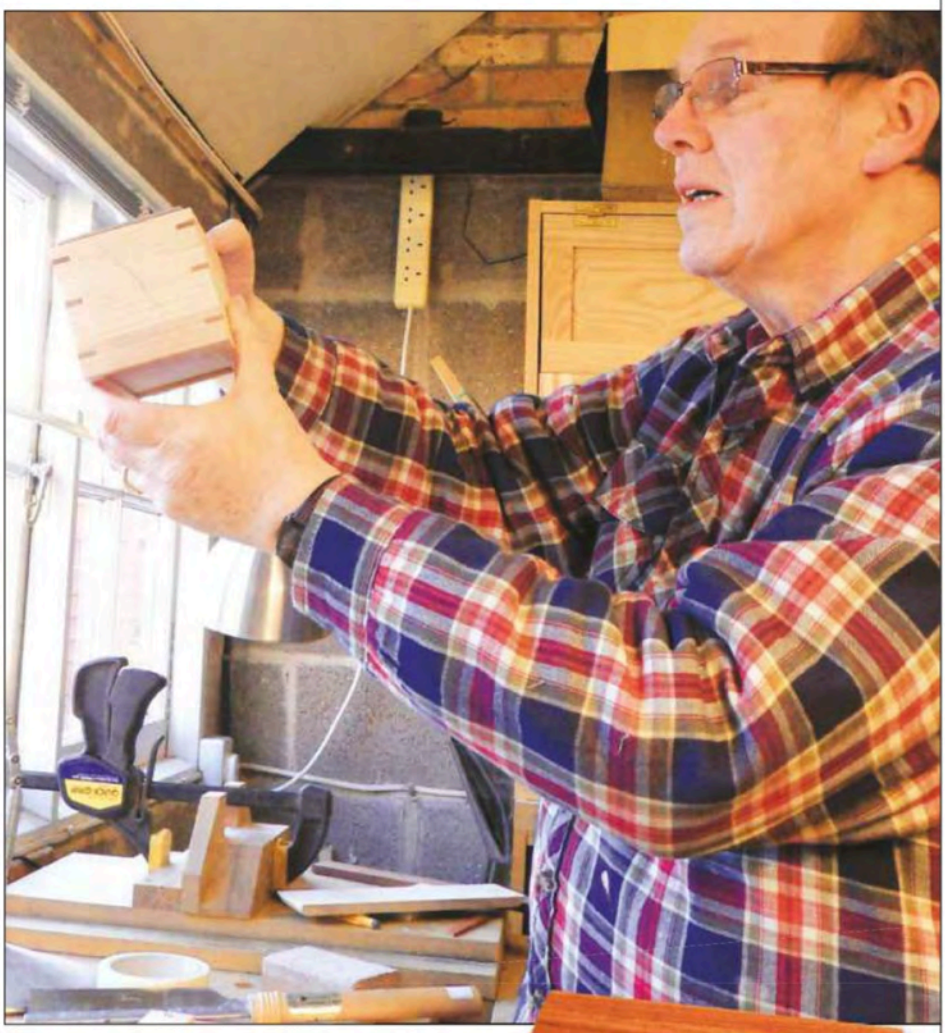
A slotted platen with identical slotted abrasives is also available, **photo 3**, and by carefully presenting shaped tools such as gouges to it from the underside you can rotate them, sighting your progress through the slots to achieve the required result.

Belt grinders

A final option is to use a dry abrasive grinding machine such as Robert Sorby's 'ProEdge' system, **photo 4**. This is basically a belt sander, with adjustable settings to suit grind angles and with a range of jigs available as well for the majority of turning tools.

It's almost a dry-grind version of a vertical wetstone grinder, but with the edge addressing the flat area of a moving abrasive belt, the resulting bevel is flat rather than hollow. It's a machine worth considering if you want that flat bevel, and with simple belt swapping to change the grit, fast dressing or fine honing can be quickly achieved.

For the budget-conscious woodworker, the workshop belt or disc sander – or even an inverted hand-held belt sander – will do a job, but a dedicated system will always shine for consistency and ease of use.



BY MICHAEL FORSTER

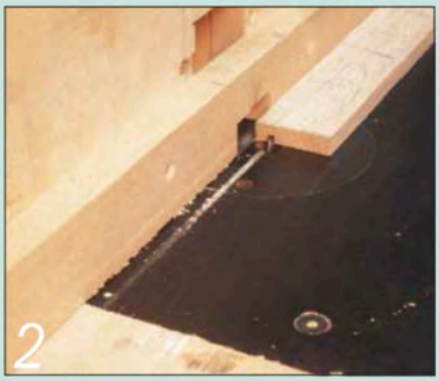
A basic box

Last month I tried to introduce the range of possibilities in boxmaking. This month, I'm going to make a basic box using the minimal kit I described last time, plus some simple shop-made jigs

1 This simple box can be used for storing playing cards or small jewellery

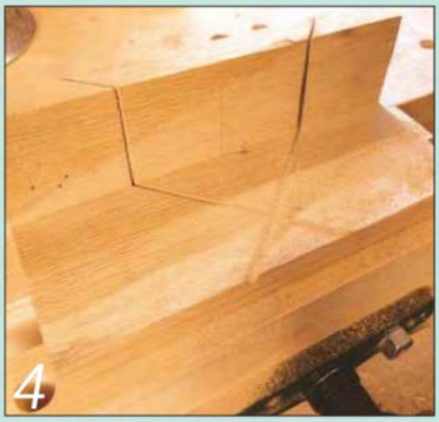
First, a word about proportions. For a rectangular box, there are a few guiding principles that can help here. The so-called Golden Ratio is a useful norm, but I try not to be obsessive about it. This is a proportion that's been judged by good eyes down the centuries to be aesthetically pleasing, but that doesn't mean that all the others aren't! I tend to use it as a rough guide when other considerations don't apply. There's a helpful online calculator – it's designed for columns of print, but the figures could relate to the length, width and height of a box – at http://goldenratiocalculator.com

Another useful guide is that a box, generally speaking, looks better if it's lower than it is long or wide. That proportion gives an appearance of stability – subliminal reassurance that whatever else it might do, it won't fall over!

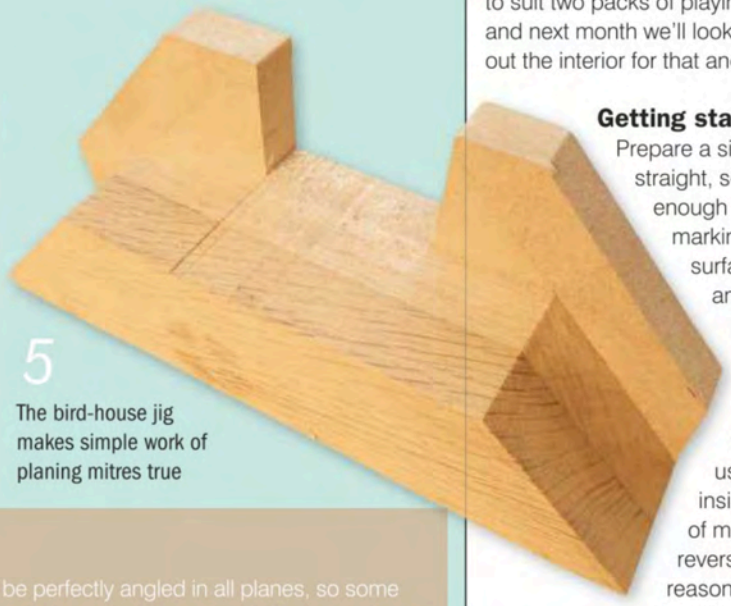


Cut grooves in the box sides on the router table to take the base panel

Separate the four box sides by cutting squarely across the strip



Cut the mitres over-long using a tenon saw and mitre block



The bird-house jig makes simple work of planing mitres true

SHOP-MADE JIGS

You'll see a few jigs either in use in the photos or referred to in the text. It's possible to manage without them, but they'll speed the making of countless boxes and will certainly repay you many times over, not only in terms of time but also of pleasure and satisfaction.

Mitre block This is a simple block of hardwood (see **photo 4**) with a fence and a couple of 45° cuts to guide the saw. It doesn't need to be clinically precise as the mitres will be shot with a plane, but the more accurate it is the less planing you'll need to do.

Shooting board This consists of two mdf boards providing a flat central bed for the workpiece and a running area for a plane on its side to the left and the right. A fence is fixed at 90° against which the face edge of the timber is braced. The fence also helps to prevent breakout from the far edge; fit it a shade too long and shoot it back at both ends with the plane.

Bird-house jig This a simple device for holding workpieces at 45° so vertical mitres can be trimmed on the shooting board (see **photos 5** and **6**). The bearing surfaces must be perfectly angled in all planes, so some care is needed in making it. The notch in the fence allows a clamp to pass through and secure it to the shooting board fence.

Key-slotting jig This cradles the box at 45° as it's passed over the router table to cut the corner reinforcement slots (see **photo 14**). You'll need to remake this regularly as the router cutter chews away the bottom, but it's very cheap and quick to make from scrap wood.

Thin planing board This will be invaluable for hand-thicknessing either solid bottom panels or strips of corner keys (see **photo 13**). It's just an 18mm thick mdf board with a thin stop glued across one end. I have a batten fixed underneath mine so it can be held in the vice.

Supplementary feed table You'll need this for machine thicknessing, as most thicknessers won't let you go below about 6mm. This is essentially similar to the thin planing board, except that the stop strip is underneath to prevent the board being drawn through the thicknesser along with the workpiece (see **photo 7**).

Form follows function

However, for me by far the most important rule is the fundamental design principle 'form follows function'. It's the only design principle I know. In other words, the box needs to be fit for purpose, which clearly includes being the right size to hold whatever is intended to go in it.

Most of the boxes I make meet the second criterion. Quite a number, where there isn't a specific size requirement, roughly follow the Golden Ratio. All follow the third, which means that some of my boxes are taller than they are long or wide.

The box I'm making here has been sized to suit two packs of playing cards, **photo 1**, and next month we'll look at ways of fitting out the interior for that and other purposes.

Getting started

Prepare a single length of straight, square timber long enough for all four sides, marking the datum surfaces – face side and face edge – to ensure accuracy in marking and cutting. In cabinetmaking, the face side is usually on the inside, but in the case of mitred boxes I reverse that. The reason? When I shoot the mitres it's the outside face that will be resting on the bed of the shooting jig and will thereby become the datum surface. So it's face side outside and face edge to the bottom.

The groove for the bottom panel is cut on the router table, **photo 2**. A slotting cutter (which cuts on the horizontal) is ideal in that it will make the most of the fence-based extraction, but a straight cutter (vertically oriented) works well enough. Just clean the debris from the table after each cut.

Making the sides

Now the strip needs to be cut into four to form the box sides. Mark off the lengths of the two sides and two ends alternately and number them 1 to 4 to ensure that they go together in the right order for the grain to flow smoothly round the corners.

I begin by cutting square ends on each piece using a fine Japanese pull saw, **photo 3**, but an ordinary tenon saw will do. Then I roughly mitre the ends in the mitre block, **photo 4**, cutting outside the end marks and leaving room to shoot them true

on the shooting board with a sharp jack plane and the bird-house jig, **photo 5**.

Playing safe

You'll see from the photo that there's a potential safety issue here, as the fingers pressing the timber down to the jig could slip into the path of the plane cutter. However, the risk is minimal, and even more so once you're aware of it. Just don't press down any harder than is necessary to hold the work flat.

To avoid breakout at the ends of the groove when shooting, I insert a slip of scrap timber to support the grain, **photo 6**. Shoot all the right hand ends first; then adjust the jig to shoot on the left of the board for the rest.

To ensure a good fit and a square box, hold the opposing sides together to check they are identical in length; I find it easier to feel this than to see it.

Tackling the base

For the box base, the choice is to thickness a piece of solid wood down to 4mm, **photo 7**, or to use a veneered board of the same thickness. The latter is more convenient, and also has the advantage of not suffering the movement problems of solid wood, so the panel can be glued in place, adding further support to the corner mitre joints.

On the other hand, the advantage of using solid wood is that the base can be readily matched to the rest of the box. In the case of a box with contrasting internal wooden linings, the base can match the linings and give the interior a pleasing unity – just another example of the variety of choices this craft offers.

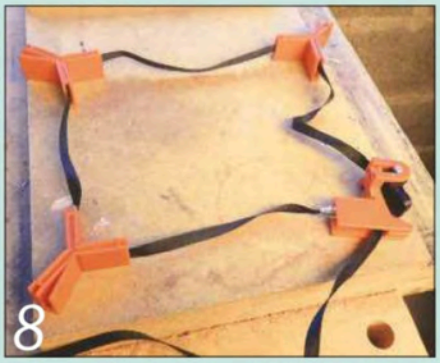
Check the depth of the groove, double it and add that onto the internal dimensions of the box. Then cut the base panel square to maybe a couple of millimetres less than that size. Movement issues aside, that will allow you some wiggle room when gluing up the carcase, which is the next task.

Preparing the assembly

Here's where it all comes together: these little bits of timber we've been working on suddenly turn into a box! However, give some thought at this stage as to whether you want to do anything to those inside surfaces before they become less accessible. Certainly, they should be planed smooth to remove any machine ripples, and you may want also to apply a finish. Apart from being simpler to do at this stage, it also makes cleaning off any excess glue from the internal corners much easier.

Plane the mitres true using the bird-house jig and shooting board; note scrap slip

For thicknessing thin parts, a supplementary feed table is a useful accessory



This cramp is a simple band, light enough not to distort the box as it'as tightened up

Lay out the pieces on a flat surface and tape them together end to end in numberv order

Flip the strip over onto its back and insert the base panel into one of its grooves

Roll up the box to form a rectangle round the base panel and tape the final corner closed

Plane a strip of wood for the corner keys down in thickness on the thin planing board

Rout the corner key slots using the key-slotting jig on the router table

The thin key strip should be a sliding fit in the corner slots

16

Cut the strip into small triangles and glue them into the slots

Clean up the corners and the keys with a sharp block plane

For the glue-up itself, an initial dry run is advisable. Get your cramps ready, **photo 8**. Lay out the pieces in a row, outside up and mitres down, on a flat surface against a straight fence. After a final check on the alignment of the mitres, secure them with masking tape, **photo 9**, adding a piece at one end for the final corner. Stretch the tape for an extra cramping effect. Next, flip the whole strip over onto its back and insert the bottom in one of its grooves, **photo 10**.

Making up the carcass

Now you can roll up the strip to form a rectangle, **photo 11**, easing the grooves over the panel edges and taping the final corner closed. It's worth fitting this dry assembly in the cramp, to ensure that tightening it won't pull the box out of line.

Check that the box is square and sits firmly on the level surface, **photo 12**, and that all the mitres close up right across their width. Then release the cramp and untape one corner of the assembly so you can lay the strip flat again.

Brush some glue onto each of the mitres (if you're using a solid base, be careful not to get glue onto that) and roll it all up again, securing the final corner with a fresh piece of tape. Check for square again, wipe off any excess glue and wiggle the base if it's a solid one to ensure that it's free to move in its grooves.

Reinforcing the corners

Now set the box on one side on a flat surface while you prepare the timber for the reinforcing corner keys. Cut a groove in a piece of scrap as a test jig, and plane down a strip to be a comfortable sliding fit into it, **photo 13**.

When the glue has gone off, you can cut the slots for the corner keys using the slotting jig on the router table, **photo 14**. Take light, progressive cuts with this, and take care to stop short of actually breaking through into the box interior.

Test the strip dry in the slots, **photo 15**. It needs to be an easy sliding fit – too tight, and it could be difficult to get fully home when glued. Then with a fine saw, roughly cut the key strip into eight over-sized triangles and insert them fully into the corner slots, **photo 16**. Brush the glue into the slots (where it will be pushed further in), not onto the keys (where the pressure will push it out).

Trimming up

When the glue is dry, trim the excess from the corner keys and clean up the carcass with a sharp plane. It's possible to do this with a jack plane, but a block plane is much easier to handle, **photo 17**. Mine is honed to a high cutting angle which allows me to plane in from both ends, irrespective of grain direction. Failing this, ensure that the plane is razor sharp and very finely set (keep trying it on scrap until you're confident of that) and work a tiny chamfer on each end before starting the clean-up.

You now have a basic box that can itself be adapted to a number of purposes by varying the interior treatment, as you'll see next month when I'll also add the lid. More than that, though, the simple techniques used in this example can be adapted, and the design scaled up or down, to develop a whole variety of boxes. Join me next month for a general look at interiors and a couple of approaches to lids

Makita®

18V 3.0Ah Li-ion LITHIUM-ION

UP TO TWICE THE RUN TIME
AND AN UNBEATABLE 22 MIN CHARGE

BL MOTOR **NEW**

Makita's brushless motor enhances operational performance as well as battery longevity. This enables a Makita 3Ah battery to give users as much work as some competitor's 4Ah products. With the added benefit of a 22 minute charging time you can keep on going all day. Less friction increases motor speed and less heat is generated which improves performance and extends machine life.

18v Brushless 2 Piece Kit
DK18005
Combi Drill: BHP459
Impact Driver: BTD129
Compact Charger: DC18RC
Batteries: 2 x 18v Li-ion
22 minute Charge Time

Impact GOLD
Xtreme Torsion Technology
UP TO 15x LONGER LIFE
Visit makitauk.com for details.

3 YEAR WARRANTY

Scan the QR code or visit makitauk.com to register for your Makita 3 Year Warranty.
Terms and conditions apply.

BL MOTOR BTD129 BL MOTOR BDF459 BL MOTOR BHP459

gastec portable glue guns

New & improved!

gas-tec 600

Portable gas powered glue gun

The **gas-tec600** is a totally portable, robust compact hotmelt glue gun that runs on butane gas. It does not require mains electricity or batteries but operates using easily refillable LEC™ (Liquid Energy Cells) power technology. The **gas-tec 600** has been built to a very high standard and incorporates a soft-feel handle and full-hand trigger, making it a very comfortable gun to use.

£55.00 plus VAT & p&p

- Comes complete with 2 empty LEC™ cartidges. Refill the LEC™ gas cartridge using standard cigarette lighter canisters.
- Each LEC™ gas cartridge refills in just 15 seconds - sufficient to keep the **gas-tec 600** running for approximately 1½ hours.
- Easy to start up - simply turn the gas dial and press the piezo ignition button.
- Reaches operating temperature in just 5 minutes.
- Thermostatically controlled to give the optimum temperature to achieve the best glue delivery.
- The **gas-tec 600** can be used for a huge range of applications from shop fitting, exhibition displays, flooring and carpet laying, ceramic tile displays, low voltage wiring, to dent repairs on cars and many more.
- Uses standard **tecbond** 12mm (½") glue sticks.
- Optional nozzles and spare LEC™ cartridges are available.

Melt rate	1.7kg (3.7lbs)/hr (typical)
Glue size	12mm (½") glue stick
Voltage	Gas powered
Wattage	185W (equivalent)
Heater	Catalytic
Temp Control	Thermostatic gas valve
Hot melt gun °C (°F)	195°C (380°F)
Low melt gun °C (°F)	Not available
Power cable	Cordless
Weight	390g (14oz)
Packaging	PET blister (10 per ctn)

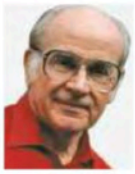
Supplied as Blister pack with 2 LEC™ cartridges

Refillable cartridges LEC™ (Liquid Energy Cells)

Refilling LEC™ cartridges from standard cigarette lighter canisters

power adhesives

Power Adhesives Limited
1 Lords Way, Basildon, Essex, SS13 1TN England
Tel: +44 (0)1268 885800 I Fax: +44 (0)1268 885810 I sales@poweradhesives.com I www.poweradhesives.com



BY GORDON WARR

Fancy figures

Remember geometry at school? It wasn't as difficult as algebra, so long as you could handle a ruler, a protractor and a pair of compasses, but you probably thought you'd never use it in later life. Now here's a second helping to follow last month's taster session

Last month I explained a number of simple geometrical processes that are essential to master when preparing accurate workshop drawings. Now I'm going to take a look at how to draw out some more elaborate shapes such as hexagons, octagons and ellipses, which you may need find useful when constructing cabinets, tabletops and the like. Once again you'll need a decent pair of compasses, a ruler and a protractor, plus some good-quality drawing paper. All are available from a good art shop if you can still find one, or online otherwise.

1: CONSTRUCTING A HEXAGON

■ If you know the length of the side of the hexagon you want to construct, set your compasses to this dimension and draw a circle of that radius (R). Keep the same setting on the compasses and step off arcs round the perimeter of the circle. The sixth arc will return you to your starting point. This will happen with any circle of any radius: that's geometry for you! Connect adjacent arcs with a straight line (a chord) to draw out the hexagon, **fig 1**. Note that its internal angles are all 120°.

■ If you know the distance D across opposite points of the hexagon, draw a circle with a radius equal to half this dimension (D/2) and repeat the process described above to draw out the hexagon, **fig 2**.

■ If you know the distance across opposite edges of the hexagon, you need a calculator to work out the radius of the circle to draw. Where D is the distance you know, the radius of the circle R is given by the formula $\mathbf{R = \sqrt{D^2/3}}$. This means multiply D by itself, divide the answer by three and take the square root of that number using the calculator. Easy peasy!

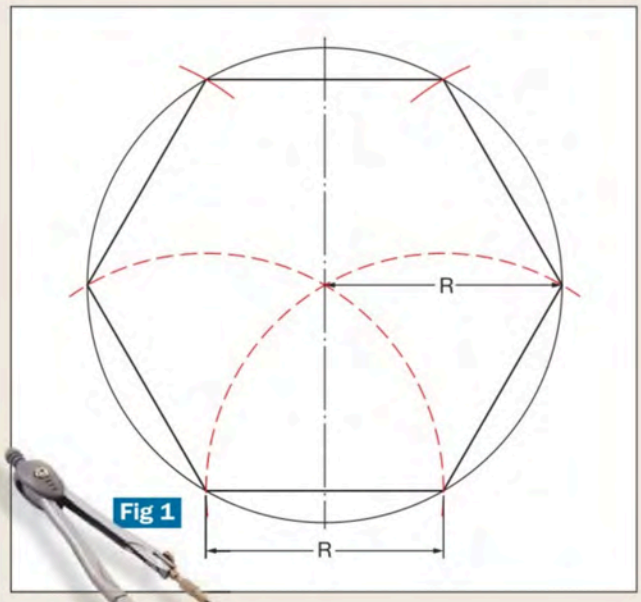


Fig 1

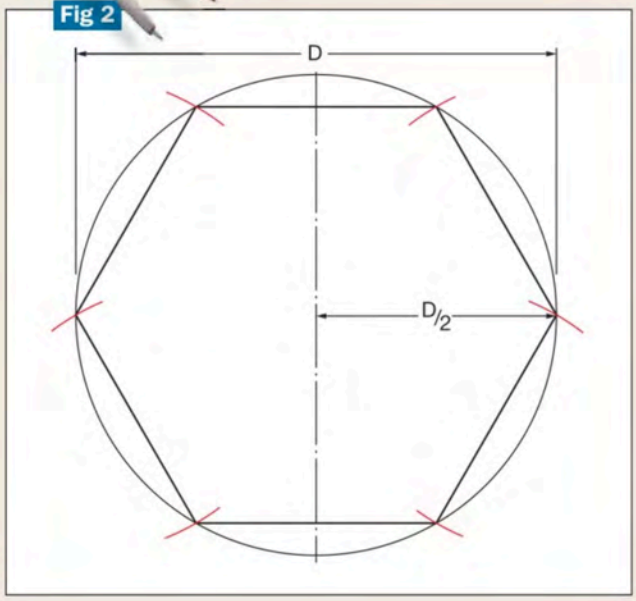


Fig 2

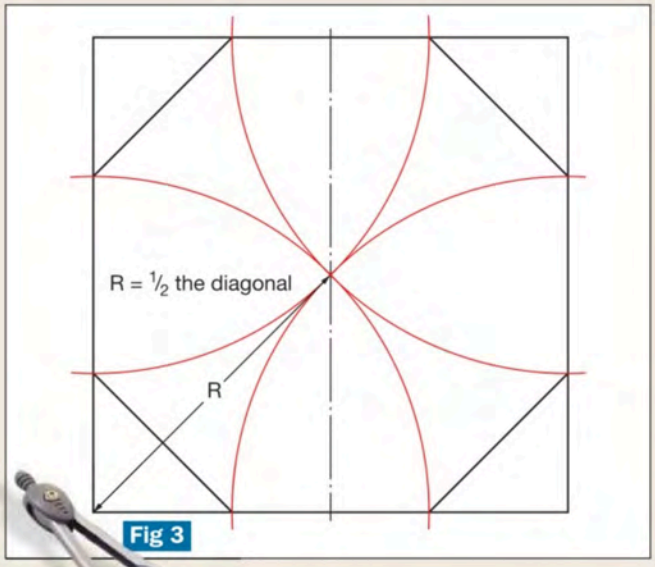


Fig 3

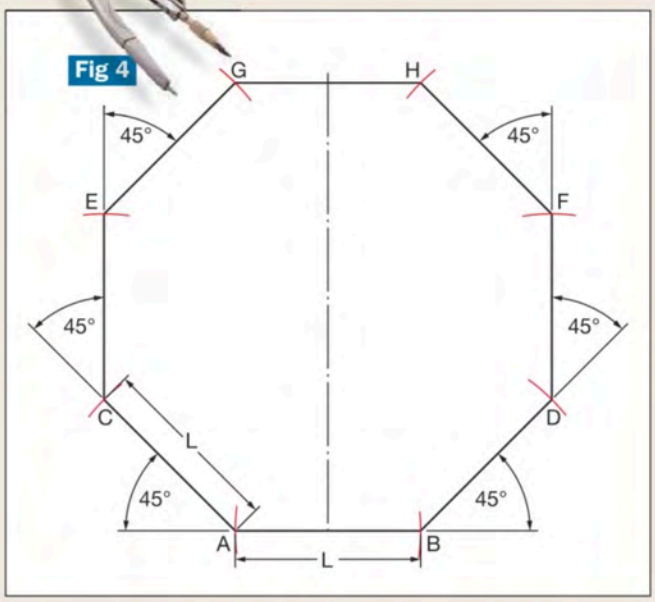


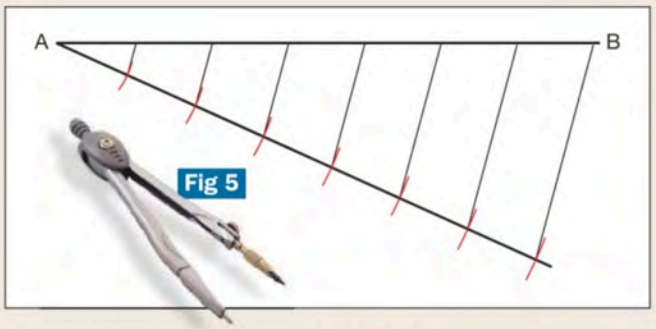
Fig 4

2: CONSTRUCTING AN OCTAGON

■ If you know the distance across opposite edges of the octagon, draw a square with sides matching this dimension. Measure the length of the diagonal and set your compasses to half its length. Place the compass point on each corner of the square in turn and draw an arc to intersect the adjacent sides. Then join up the points of intersection to create the octagon, **fig 3**.

■ If you know the length L of the side of the octagon you want to construct, draw a baseline AB of that length. Use a set square to draw an angled line extending upwards at 45° from points A and B. Set compasses to the length L of the baseline and step off an arc of that radius on each angled line to give points C and D.

Now use the set square again to draw a vertical line from points C and D and step off an arc of the same radius on each vertical line to give points E and F. Then draw a line at 45° to each vertical line at points E and F and step off another arc on each line to give points G and H. Join points G and H to form the eighth side of the octagon, **fig 4**.



3: SUB-DIVIDING A LINE

This simple technique is invaluable if you need to divide a line into a number of equal parts. First draw a line extending at an acute angle (less than 90°) from one end of the known line AB you want to subdivide. Use compasses to step off the number of divisions required along it, starting at A and using the same compass setting for each arc. Join the last arc intersection to point B, and draw lines parallel to this through all the other intersections. These will divide line AB into the required number of equal parts, **Fig 5**.

4: THE PARTS OF AN ELLIPSE

What is an ellipse? Imagine a cone (such as a dunce's cap) being sliced in half horizontally. The result is a circle. Angle the slice and you get an ellipse, which is basically a squashed circle. Its length AB is called the major axis and its width CD the minor axis. These lines intersect at right angles at point E. **Fig 6** shows these points; a and b denote half the length of each axis.

At the heart of every ellipse are two focal points or foci, F1 and F2, positioned on the major axis. The sum of the distances from any point P on the ellipse to the two foci (PF1 + PF2) is the same wherever point P is. The distance c of each focus from the centre point E is given by the formula $\mathbf{c = \sqrt{(a^2 - b^2)}}$.

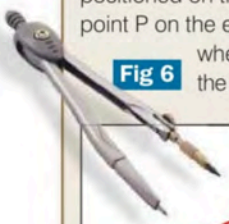
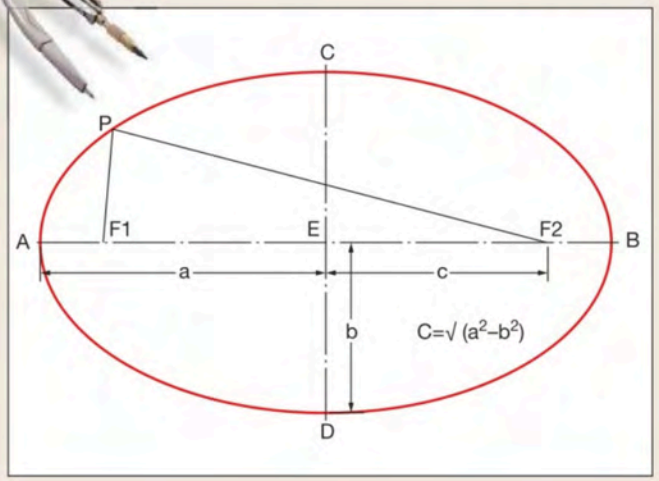


Fig 6



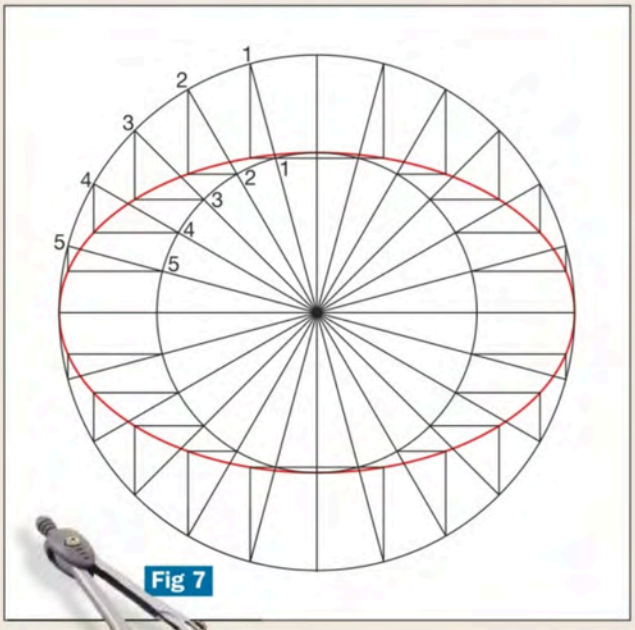
5: CONSTRUCTING AN ECLIPSE

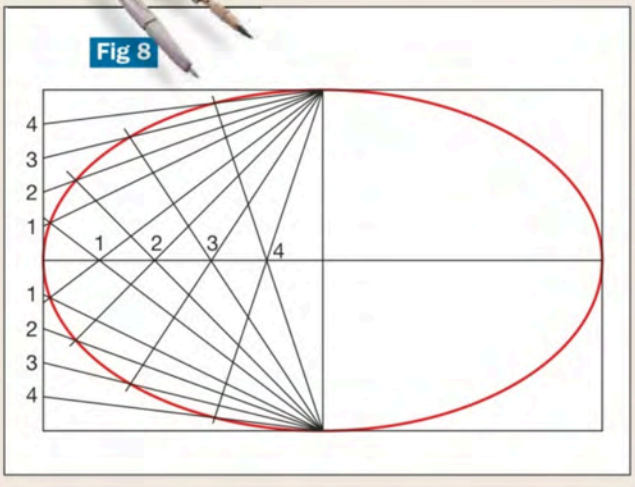
It's rather complex to create an ellipse mathematically, but some clever geometry can be used instead. Here are two methods.

■ The concentric circle method, **fig 7**. Draw two lines to represent the major and minor axes, and measure their lengths. Use your compasses to draw two concentric circles which have half of each axis as the radius. Next, draw in diameters at 15° spacings using a protractor. Draw a vertical line where each diameter intersects the larger circle, and a horizontal line where it intersects the smaller circle. Each point where these lines intersect is on the ellipse, which you can now draw freehand.

■ The radial lines method, **fig 8**. Draw the two axes as above, and enclose these in a rectangle. Divide the major axis into a number of equal parts (see **section 3**, left), and divide the side of the rectangle that's equal to the length of the minor axis into the same number of equal parts.

Draw lines from each end of the minor axis to pass through the subdivisions of the major axis. Then draw lines from the same points to pass through the subdivisions of the short side of the rectangle. As before, each point where these lines intersect is on the ellipse, which you can now draw freehand.





Stock Gaylard

STOCK GAYLARD OAK FAIR

Saturday

24th August 2013

10am—5pm

All things timber related & a great family day out. Children Free, Dogs welcome 10% Discount call: 01749 813899

www.stockgaylard.com

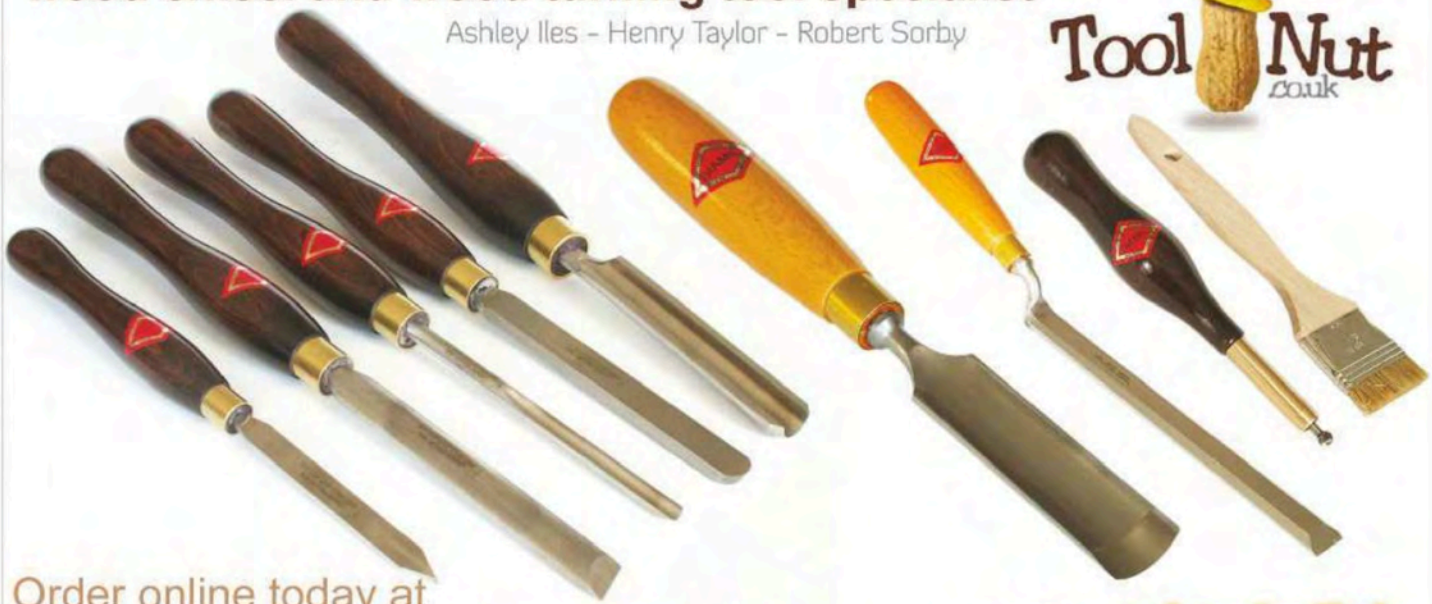
Tel: 01963 23511

---

wood chisel and wood turning tool specialist

Ashley Iles - Henry Taylor - Robert Sorby

Tool Nut .co.uk



Order online today at

www.toolnut.co.uk

we now stock turning blanks

BY KEITH SMITH

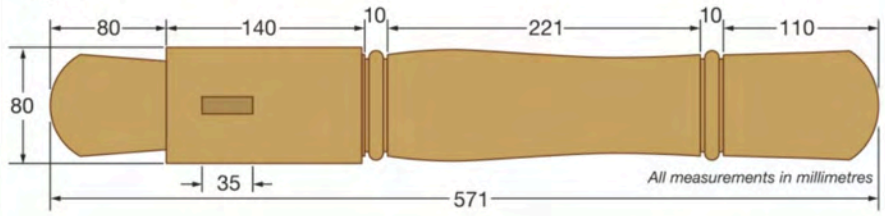
I get asked to make a lot of different things which are often awkward and difficult to create, but occasionally I get a commission which is really enjoyable. This is one of them...

Lighting-up time

This unusual commission came about when I was asked to make an oak chandelier for a medieval banqueting hall. They already had several in the room, but after some renovations they found that they needed another which had to be an exact copy of the existing ones, **photo 1**. This task was made very much easier as I was able to bring one of the originals back to the workshop and take accurate measurements from it.

Light fittings are generally of pretty poor quality, even if you pay a lot of money for them, and although I've fitted traditional metal candle holders this time, this design could easily be adapted to take electrical

Fig 1



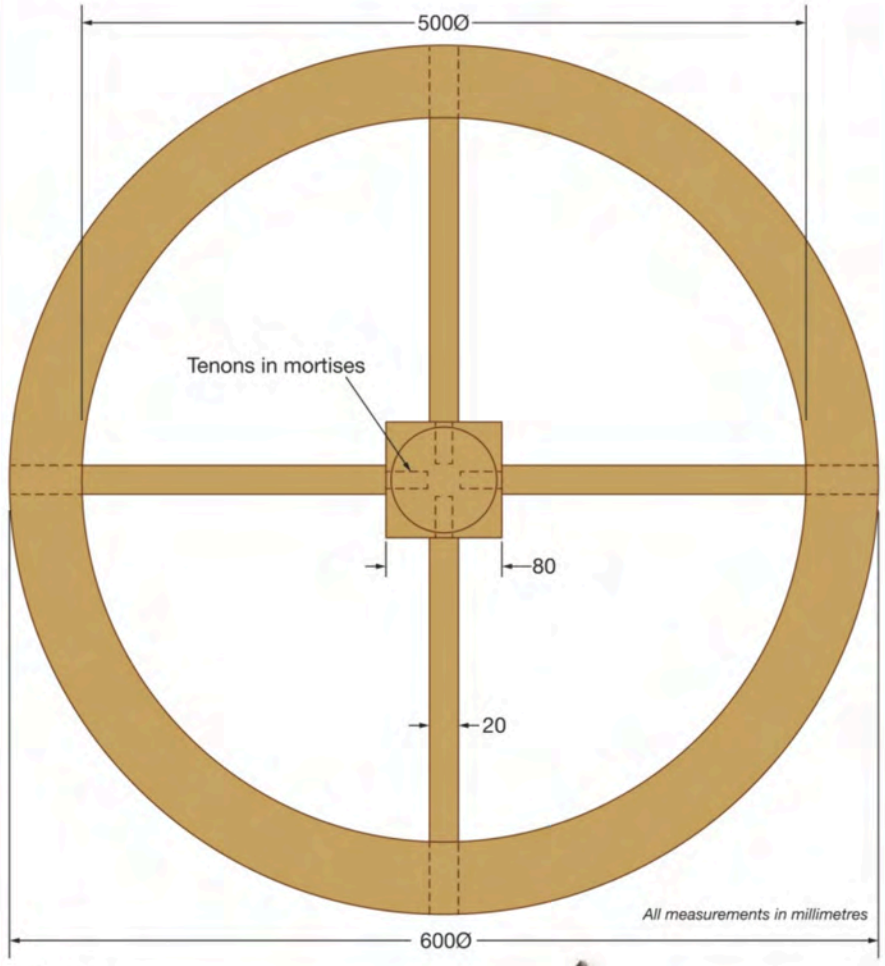
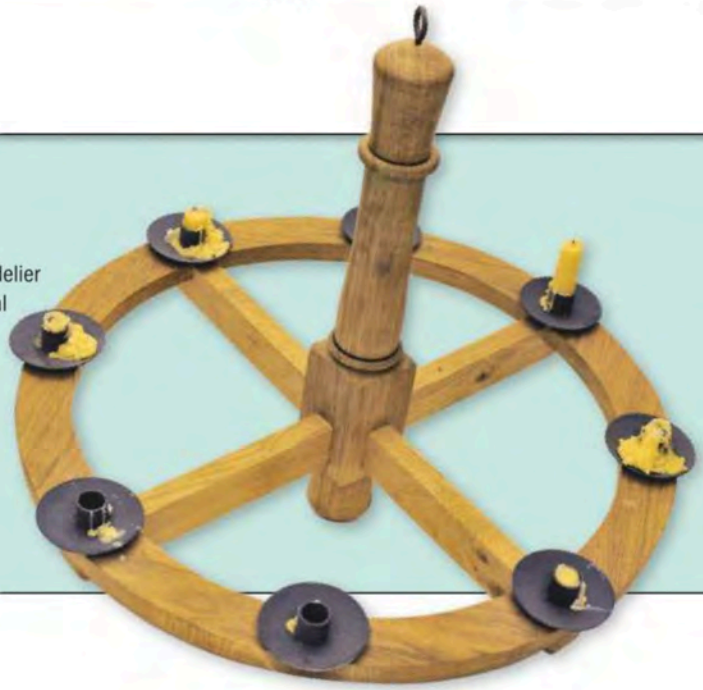


Fig 2



1 The existing chandelier with its eight metal candle holders was my model

fittings. Another idea I had while making it was that with a little modification, a coat of aluminium paint and a few high-power LEDs this would make a fantastic 'space station' light fitting for a child's bedroom.

Design changes

When producing a replica, the design work is already done for you. However, unless you have to make an identical copy, you don't have to follow the construction methods used in the original down to the last detail. The chandelier I had to copy had very small half-lap joints where the four sections of the ring were connected together. With such a small glued area, some of these had opened up slightly. I therefore decided to use butt joints instead, with a loose tenon (a domino) in each joint.

The centre spindle

I started by marking out the design roughly on one face of the blank that would become the central turned column, **fig 1** and **photo 2**. I also marked the position of the mortise on each face, **photo 3**. It was a lot easier to cut these with a mortising machine while the wood was still square, **photo 4**.

Even though this is officially a spindle it was quite a heavy piece of wood to turn, and it was important to set the lathe to a relatively slow speed and to centre the blank perfectly. I set the rest close to one edge and then rotated the blank to make sure that each edge was the same distance away from the rest, **photo 5**.

Turning time

To keep the shoulders of the square section crisp, I cut these corners with a skew chisel before turning the remainder of the column to round with a roughing gouge, **photo 6**. I then marked with a thick pencil all the points with the narrowest diameters that needed the deepest cuts. I took accurate measurements from the existing chandelier with a set of callipers, and used a parting tool to cut the slots to the required depth, **photo 7**. These would provide a good datum to follow for the rest of the turning.

Next I marked the widest points of the column with a thick pencil line, **photo 8**. This gave another datum to work to, as the wood could be worked at either side of the line. So long as the pencil line was still there when I finished, I would know that I hadn't cut away too much material and made the column too thin.

I then carried out the rest of the shaping

and was very happy with the results, **photo 9**. All I had to do then was clean off the tool marks with a sharp skew chisel.

Making the arms

I set about preparing the four arms next. These were simply machined to size (50 x 20mm) and cut to length. I formed a tenon on one end, before rounding over one edge at the other end, **photo 10**. If you're making this as a light fitting and are happy with just the four lights, then the chandelier can be assembled into a cross at this point and there's no need to make the ring at all.

Cutting circles

I made the ring in four sections, **fig 2**, and, as I'd decided to butt-joint the ends with loose tenons (dominos), I didn't need to make any allowance for lap joints. I drew out the quadrant on a template of 4mm mdf; this gave me the dimensions for the four timber pieces I would need, which in this case measured 480 x 150mm.

I had previously made a circle-cutting jig for my bandsaw. This is simply a board with a batten screwed to the back which fits into the mitre slot so that the board stops just short of the blade. A line is drawn down the centre of the board perpendicular to the blade, and the board is then cramped onto the bandsaw table so the pencil line is in line with the front edge of the teeth of the blade. The exact radius of the circle can be set by driving a pin into the board along the pencil line and using the pin as a pivot point for the circle, **photo 11**.

Separate sections

The jig does make cutting circles easy, but it's trickier to cut quadrant rings. I started out by cutting the outer edge of the ring on the mdf template. I then screwed the first piece of oak to the template and cut the outer edge. I repeated this for the other three pieces. Next, I reset the jig for the internal radius before reattaching the oak to the template and cutting the inner edges.

I laid the pieces out on the bench to make sure I had a perfect circle, **photo 12**, before cutting the slots in their meeting ends with the Domino machine. I applied glue to the loose dominos, made up the joints and used a strap cramp to pull the ring together. Unfortunately I found it couldn't pull the joints up really tight, and in the end I

2 Mark the outline of the central column on a square oak blank...

3 ...and add the positions of the four mortises into which the arms would fit

4 The bench mortiser makes light work of cutting the mortise slots

5 Centre the blank carefully and set the lathe to run at its lowest speed

6 Cut the sharp corners of the square centre section with a skew chisel

7 Cut down to the lowest points in the design with a parting tool to act as a datum

8 The thick pencil line shows the point where the column is at its widest

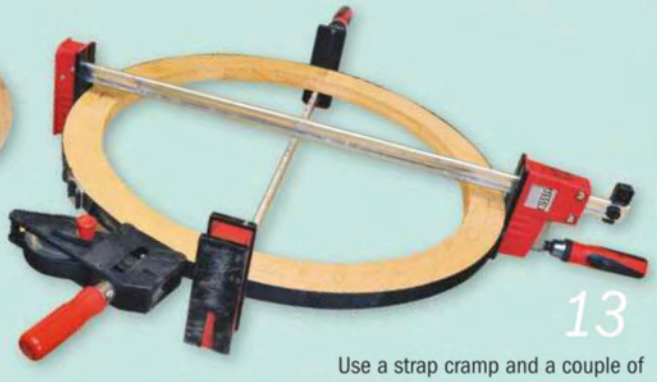
9 Finish shaping the central column by forming the two half-round beads

10 Cut the arm tenons on the bandsaw and round the other end on the disc sander

11 Mark the quadrant on a piece of mdf and use a circle cutting jig on the bandsaw

12

Use a domino in each joint, setting it in slightly towards the inside edge



13

Use a strap cramp and a couple of bar cramps to pull the joints up tight

had to resort to using a couple of additional long cramps, **photo 13**.

Using a bandsaw to cut out the circle inevitably creates saw marks. I removed these with a sharp spokeshave, **photo 14**, once the glue had dried, and sanded the curves smooth.

Attaching the ring

The ends of the arms then needed rebating to a depth of 20mm to take the ring. To do this I temporarily cramped the arms in place and marked the position of the ring on them, **photo 15**, before removing the arms and cutting the rebate on each one. The arms were then glued into their mortises in the central column, and once they had cured I glued the rings onto the arms, **photo 16**; for extra strength I also added a screw through each joint, **photo 17**.

Hanging the chandelier

The last job was to fit a metal hanger; for this I glued and screwed a vine eye into the top of the column, **photo 18**. I used a galvanised steel eye from the garden centre; if you prefer to use a stainless steel eye, they're available from www.s3i.co.uk

Before the final finishing process I thought it would be a good idea to check that the chandelier hung level on its rope, which it did. All that remained was to give it several coats of finishing oil before fitting the metal candle holders.

14

Clean off any remaining bandsaw marks with a sharp spokeshave

15

Mark the position of the rebates on each of the four arms with the ring in place

16

Cut the rebates, fit the arms and glue the ring into its rebates

17

For extra strength, drive a screw through each joint into the arm below

18

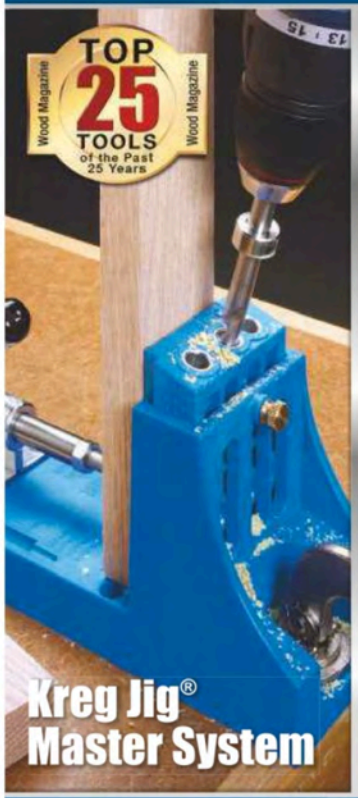
The new chandelier was an excellent match for the existing one

Henry Taylor Tools

Peacock Estate
Livesey Street
Sheffield S6 2BL
Tel: +44 (0)114 234 0282
Fax: +44 (0)114 285 2015
email: sales@henrytaylortools.co.uk
website:www.henrytaylortools.co.uk

Makers of fine hand tools since 1834. Each individual tool is hand forged and hand finished by our Sheffield craftsman. Choose from our vast selection of cranked paring, incannel paring, incannel & outcannel firmer gouges, registered mortice, cranked bevel edge paring, long thin paring, bevel edge socket, heavy duty socket firmer, offset sockets, short cranks and swan necks. They will perform and serve you well for many years to come. See our website for a list of stockists or simply contact the office.

Precision. Innovation. Simplicity.



Kreg

Drill.

Hardened steel drill guide allows effortless, clean drilling of pocket holes

Drive.

Simply clamp the workpieces together, place the screw in the hole, and drive

Done.

A strong joint produced in minutes - no need for glue and dowels!

Find your nearest stockist
kregtool.eu

INCHMARTINE Tool Bazaar

Visit our successful website for constantly changing tools for sale

www.toolbazaar.co.uk

We also still produce a mail order list. Contact us for a copy.

The leading suppliers of antique and quality old woodworking tools for both Craftsmen and collectors in the country!

Rait Antique Centre, Rait, Perthshire, PH2 7RT
Tel: **01821 670770** • Mob: **07734 345652**
E-mail: **toolbazaar@googlemail.com**

BY DAVE REGESTER

The long & the short

My job is to turn pieces for whoever will pay me the going rate, so when a private customer asks me to make something for him my first inclination is to say yes. My second is to ask myself if I can

My workshop is set up for turning items from a stock list of objects that I've designed and which my customers know will sell. So if I'm asked to make something different, I should immediately ask myself if I can do so without interrupting my normal flow of production. However, I like a bit of variety, and on this particular day I also wanted to please an old client.

How long can you go?

My friend first asked me over the phone how long an item I could turn between centres. I have two lathes, both of which are Graduates. One has a short bed on which I do most of my work such as bowls, and the other has a long bed on which I can turn work up to 1250mm long. My friend wanted a spindle 1425mm long and 41mm in diameter on which to hang a quilt, so that gave me a problem.

I already had experience of turning spindles longer than the lathe bed, as I'd once made a wardrobe out of spindles lined with muslin curtains. Fortunately I also still had a spare example of one of the spindles from the wardrobe to show him.

A cunning plan

I explained to him that the trick is to cut the blank in half, turn it in two sections and then join them end to end. The difficulty is to make the joint so it doesn't show. The timber chosen and supplied by the client was American ash, which fortunately has a very straight grain. So, provided the joint was clean and the ends the same diameter, I felt confident that I could do the job.

In order to keep the grain interruption to a minimum I cut the blank in half with a Japanese saw, which has a very thin kerf. I put some Gaffer tape around as a guide. If the sides are parallel when the tape overlaps, then I figured that the edge would be square, **photo 1**.

Mounting up

The blank was provided with the centre portion roughly rounded but the ends left square because they were to be carved to fit into iron finials. I inserted the square end of one half into a four-jaw chuck on the headstock, **photo 2**, so that there was support when the hole was being drilled in the other end and so there would be no compression between centres which can cause the piece to flex.

Checking alignment

Before I started to turn the piece, I thought it wise to check that the tailstock lined up accurately with the headstock. When I was inexperienced in these matters I thought that it wasn't very important, but I've found it does make a real difference to the accuracy of the turning. This is particularly relevant when you want to make a good joint.

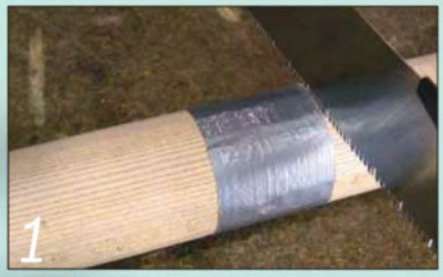
With one end mounted in the chuck, I offered up the revolving centre to the other end and rotated the chuck by hand. If the tailstock is correctly aligned the centre should make one hole in the end. If it describes a circle you know that the bed needs adjusting.

If you have a laser spirit level (which I happen to own as it was a bargain in a well-known German supermarket, and I thought it would come in handy one day), you can check that the bed is horizontal and then shine the laser through the hollow headstock spindle and check that it lines up with the tailstock centre.

Drilling the hole

To drill the hole I mounted a saw-tooth drill bit in a Jacob's chuck in the tailstock. After starting the lathe at a slow speed, I wound up the tailstock and carefully drilled the hole, **photo 3**. These bits are better for drilling into end grain than Forstner bits, but there's not a lot in it.

I drilled the hole 75mm deep, regularly removing the bit to avoid the build-up of



Wrap tape round the blank to help you make the saw cut perfectly square

Secure the square end of the blank into a four-jaw chuck in the headstock

Mount a saw-tooth drill bit in a Jacob's chuck in the tailstock and bore the hole

Insert the revolving tailstock centre in the bored hole and adjust the tailstock

Cut slots down to a diameter of 45mm at 300mm intervals along the blank

Use a spindle roughing gouge to remove the waste wood between the slots

waste that can jam the bit in the hole with potentially disastrous consequences. It's a good safety feature to have a foot switch so you can turn off the lathe without having to reach across the work if this happens.

Two ways forward

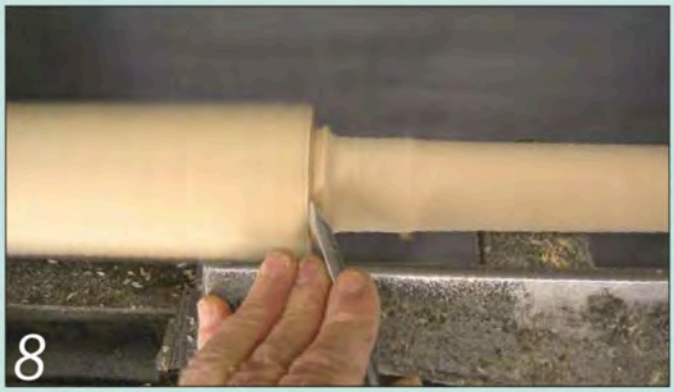
When the hole is drilled, you can either insert the second half into the four-jaw chuck and repeat the operation or you can proceed to turn the piece already in the lathe. The advantage of doing the piece already in the lathe is that it is perfectly centred relative to the hole just drilled. If you take it out to drill the other half (to save the time taken by removing the Jacob's chuck from of the tailstock and replacing it with a revolving centre), there's a possibility that when you remount the first half it won't be perfectly centred. I think it's probably better to turn the piece already in the lathe than to worry about saving time.

Tailstock support

To turn the piece you need a revolving centre which has a diameter greater than the hole. This is inserted into the hole and the tailstock adjusted so it supports the end of the blank, **photo 4**. You don't need to put any pressure on the end of the piece as the chuck does most of the supporting.

The spindle is then reduced in diameter to slightly more than the required size. I find that the most efficient method of ensuring a

Use the gouge on its side to get a smooth finish, then switch to the skew chisel



Turn the round section close to the pommel, then use a skew for the vertical cut

Really sharp tools guarantee a clean finish on both slicing and planning cuts

The join is reinforced with an ash spigot inside, and is virtually invisible

consistent diameter along the length of the blank is to use a beading and parting tool to make slots in the spindle at intervals of about 300mm, using callipers set to 45mm, **photo 5**, and then to join up the slots with a spindle roughing gouge, **photo 6**. Use this to make scoops down to the required diameter rather than running the tool along the whole length. Once the diameter has been reached you can use the spindle roughing gouge on its side to get a better finish before using the skew chisel to get it really smooth, **photo 7**.

Point of contact

You will notice that my skew chisel has a curved profile. This makes it easier to use, because only one point on the edge can touch the surface of the piece at any one time. You can also change the angle at which it's offered to the wood to adjust for different grain characteristics. It's important that the point of the skew is not rounded over, as I use it to do details such as the slicing cut on the end of pieces.

By the way, my skew chisel is an excellent hand-forged model from a company called Drechselzentrum of Erzgebirge in Germany, but any skew will be improved by being ground to this shape.

I do the planing cut with the point down and cutting with the part of the edge which is near the point. If you use it with the point up (as is sometimes taught) and you have a momentary lapse of concentration, the point can catch in the work with disastrous consequences. With the point down the results are not nearly as bad; it just cuts a little deeper than intended.

A square transition

My client wanted the pommel – the point where a square section meets the rounded part – to have an abrupt vertical face. I formed this by turning the central section as close to the line of the pommel face as possible with the spindle roughing gouge, and then doing a vertical cut with the skew, **photo 8**.

This cut is done with point of the skew, and needs a bit of practice on spare wood before being done on an important piece. The trick is to use only the point for the cutting, to do a very thin cut and to line up the bevel near the point in the direction of the face you need. The rest of the bevel has to be canted away from the face so the edge doesn't catch it as the tool moves down. The tool is moved over the tool rest in a smooth arc which would meet the centre of the work should you go that far.

The skew chisel needs to be very sharp to do these cuts effectively, and I always sharpen it with a Tormek furnished with a Japanese waterstone wheel before the final cut. If done properly, the slicing cut on end grain won't need sanding. The finish from the planing cut is also pretty good, as can be seen in **photo 9**.

Preparing the joint

I then used the point of the skew on the cut end to make it slightly concave and totally smooth so that when the two ends meet the join should be nearly invisible. I use my very best skew for most of this cut, but when I get to the revolving centre I use a chunkier one as I invariably end up having very gentle contact with the centre which blunts the tool just a little. This part of the cut is not terribly important as the surface of the end next to the hole won't be visible.

The diameter can then be checked with a micrometer to make sure that it's 1mm fatter than required. It will then end up at the correct diameter when it's sanded with 100, 180 and 220-grit abrasive paper.

Making the spigot

I then did the other length in the same way. I had kept the blank in the workshop for a couple of weeks to assume the ambient moisture content of the atmosphere there, and used a piece of ash that had been in the workshop for a long time to turn the spigot to fit the hole. This meant that when the pole goes into atmospheres of different moisture content, the two pieces should expand or contract by the same amount.

The spigot was turned simply between centres using the same techniques as the pole. It was turned just a tad shorter than the hole, but the ends didn't have to be cleaned up as they would be invisible inside the pole. When the two ends are joined with this spigot in place any small adjustment in diameter of the sections can be done by hand sanding. **Photo 10** shows the join, which was probably as good as possible.

The Rocking Horse Shop

Designers, Makers & Restorers of Excellent Wooden Rocking Horses
in the best Tradition of English Hand Craftmanship since 1976

our New design!

Mini-Rocky laminated Rocking Horse

A super new fun project for you to make!

Plan & Instructions
Only £14.99

Horse & Bow Timber £85 Horse & Stand Timber £95

both timber packs include full instructions

Also suppliers of top quality, accessories & fittings all made in our workshops.

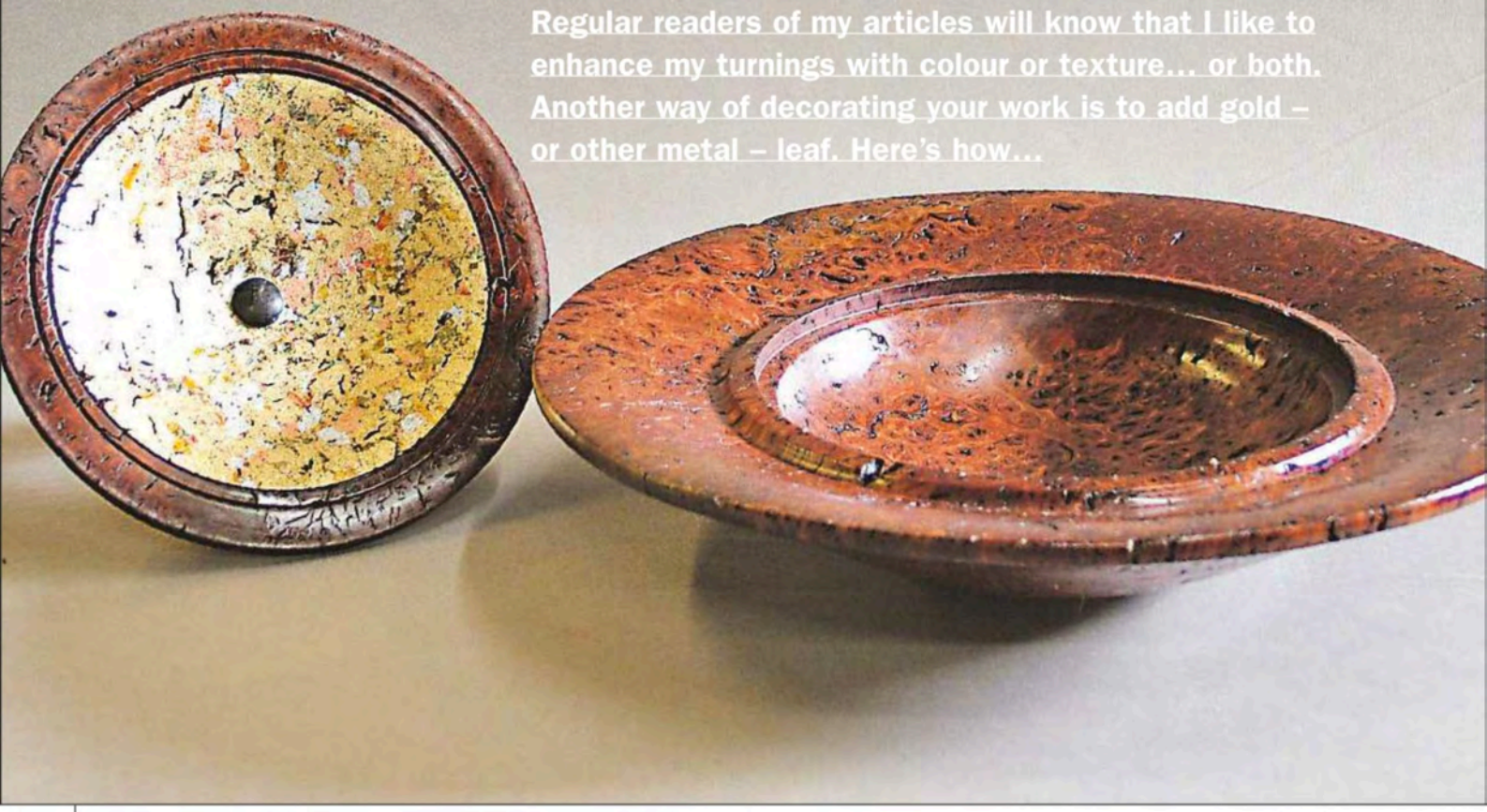
www.rockinghorse.co.uk Tel: 0800 7315418

Fangfoss, YORK YO41 5JH

BY COLIN SIMPSON

All that glisters...

Regular readers of my articles will know that I like to enhance my turnings with colour or texture... or both. Another way of decorating your work is to add gold – or other metal – leaf. Here's how...



Gold leafing is a technique that dates back many centuries, but it has certainly become easier to do, as you'll see. To demonstrate the technique I'll turn a lidded box and gild the inside. As far as wooden boxes are concerned, I've been inspired by Cindy Drozda's work and this piece has certainly been influenced by her.

Starting out

I've chosen two pieces of jarrah burr for this little box. The piece for the base is 225mm in diameter and the lid piece is 150mm. I started with the base and, in reality, I'm turning an ogee-shaped bowl.

I used a faceplate to mount the stock on the lathe and shaped the outside using a bowl gouge, **photo 1**. To refine the shape and improve the surface finish, I used a shear cut with the bottom wing of the bowl gouge, **photo 2**. Keep the handle of the gouge down when making the cut, and try to keep the bottom wing at about 45° to the surface of the wood.

Cut the dovetail spigot for your chuck using a skew chisel on its side, **photo 3**, and then sand the outside of the bowl, **photo 4**. Where possible I power-sand my pieces down to 400 grit and then hand-sand them to 1200 grit.

Working on the front

Mount the piece in the chuck and true up the top. The rim does get quite thin, and I like to work on it first while there's still some mass in the centre of the piece. Use the

bowl gouge to shape the first 40mm or so of the rim, **photo 5**, and when this is done, hollow the centre of the bowl out as normal, **photo 6**, gradually working out from the centre towards the rim.

Next I cut a small step for the lid of the box to fit in, **photo 7**. I used a skew held on its side, but a parting tool would do just as well. Leave the high point between the rim and the step at this stage. This can be blended in once the lid is in place. Sand the rim and the inside of the bowl, then remove it from the lathe.

Tackling the top

Make the lid using the same process I've already described. Turn the outside of the lid and the chucking spigot first, **photo 8**; then turn it round and hollow out the inside, **photo 9**.

The next thing to do is to fit the lid to the base. I like to turn a small chamfer on the edge of the lid, **photo 10**, and keep offering up the base to check the fit as the cut progresses, **photo 11**. Once the narrow part of the chamfer fits well, turn the edge of the lid so it's parallel.

The lid needs to be a tight fit at this stage because the base will be used as a jam chuck to turn the top of the lid. The fit can be eased a little later with abrasive. I then turned a decorative bead on the inside of the lid, **photo 12**, that will also become the boundary for the gilding. Sand the inside to a finish, then remove it from the lathe and remount the base in the chuck.

Mating the parts

Fit the lid to the base. Use a sheet of paper towel if necessary to ensure a snug fit, and blend the curve of the lid into the ridge left on the rim of the bowl. I used a round-nosed scraper to do this, **photo 13**. I then taped the lid in place with masking tape, **photo 14**. This won't hold the lid in place if you take too heavy a cut, but it will prevent the lid from flying across your workshop! Refine the top curve of the lid and remove the chucking spigot using gentle cuts with a spindle gouge, **photo 15**.

Making the finial

Drill a 10mm diameter hole all the way through the centre of the lid using a Jacobs chuck in the tailstock, **photo 16**. This hole is for the decorative finial, and turning it involves some simple spindle work.

To make it, mount a piece of contrasting wood – I used bog oak - between centres and turn a 10mm spigot on one end. Undercut the shoulder of the spigot with a slicing cut from a skew chisel, **photo 17**, so

Mount the base using a faceplate and shape the outside with a bowl gouge

A shear cut with the bottom wing of the gouge should leave the surface with few blemishes

Cut the dovetail spigot for your chuck using a skew chisel held on its side

Power sanding is a quick process, but it does create a lot of dust. Finish sanding by hand

Use the tip of the bowl gouge to define the first 40mm of the rim

Then hollow out the central section, gradually working out towards the rim

Cut a step at the junction of the rim and bowl for the lid to fit in

Shape the top of the lid in the same way as you tackled the base of the bowl

Then reverse-mount it on the chucking spigot and hollow out the inside

Take light cuts on the edge of the lid to create a small chamfer

Offer up the base to the lid to check the fit, and adjust it as necessary

A bead on the underside of the lid will act as a boundary for the gilding

Re-chuck the base, fit the lid and blend in the curve with a scraper

Masking tape will prevent the lid from flying off across the workshop!

Refine the shape of the top of the lid by taking light cuts with a small spindle gouge

Drill a 10mm hole through the centre of the lid using a Jacobs chuck to take the finial

it sits better on the domed part of the lid.

I like to hold this type of work in a scrap piece of wood with a 10mm hole drilled in it to take the spigot. Most of the shaping can be done with the tailstock supporting the work, **photo 18**, but you will need to remove the tailstock for the last bit, **photo 19**. Finally, turn a small button to fit the hole on the inside of the lid, **photo 20**.

If you don't want to do the gilding, simply assemble the piece and put a finish of your choice on it. I prefer oil finishes on burrs, and I give them a minimum of three coats.

The golden touch

Gilding can add an extra decorative touch to your work, and if you gild the inside of a box it will give the user a big surprise when opening it for the first time. **Photo 21** shows a small selection of the types of metal leaf available. Some are not pure metals, but they're considerably cheaper than the real 24-carat gold leaf in the foreground, which sells for around £1.25 a sheet! The bottle in the photograph is the 'glue' (called size) that allows the metal leaf to stick to the wood. All these products can be bought from good art shops.

Applying the leaf

The gold leaf will stick wherever the size has been applied, so be careful how you brush it on, **photo 22**. You must allow the size to become tacky, but not to dry fully. This can take up to 30 minutes, depending on the air temperature and the porosity of the wood you're using.

To apply the leaf, gently pick it up by the corner using a soft brush. It helps if you put a tiny bit of petroleum jelly on the tip of the brush, or get some static into the bristles by passing the brush through your hair. Gently lay each piece in place and overlap them slightly.

The triangle trick

The real gold leaf came with a backing paper that makes it easier to handle. You can pick the leaf up by the paper and lay it in place. I cut mine into triangles because I thought there would be less waste, **photo 23**. You can use odd bits that fall off to fill in any gaps. Another soft brush can be used to tap the leaf into place. Once all the gaps are filled in, let the size dry fully – preferably overnight.

The next day, use a soft brush to rub over the surface gently and remove any loose bits of overlapping leaf that didn't stick to the size, **photo 24**. If any sticks to the brush it means the size is not fully dry, so leave it a little longer.

I like the effect of applying leaf to burr wood as the leaf doesn't go into all the fissures, leaving a random pattern, but if you want a smooth flat gold leaf effect, then you must use perfectly smooth wood.

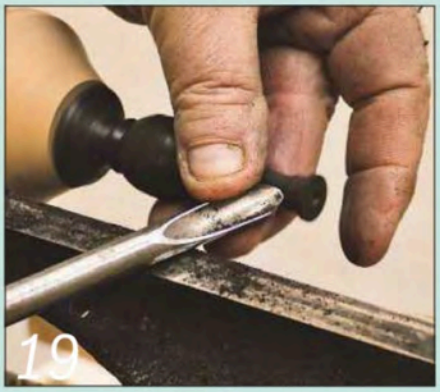
Once the gilding is complete, you can finish the whole piece with the finish of your choice. I am happy to oil over gilding, but be very gentle when you burnish it or you might rub through the gilding. You may prefer to spray on an acrylic lacquer.

Confession time

The observant reader will have noticed a different gilding effect on the lid in the large picture at the beginning of this article. In my haste to complete the piece for the editor's deadline, I brushed the loose leaf off before the size had dried completely. I removed too much leaf and exposed the wood in a couple of places. This meant I had to leaf the whole piece again. Not having sufficient gold leaf left, I decided to gild it with a multitude of different metal flakes instead. It gives an interesting and, I think, a pleasing result. Motto? More haste, less speed!

Cut a 10mm spigot on the finial and undercut the shoulder with a slicing skew chisel cut

Fit the spigot in a hole in a scrap block. Then shape the finial with a spindle gouge



Remove the tailstock and support the piece by hand while you make the final cuts

Make a small button with a 10mm spigot to fit in the hole on the inside of the lid

Here is a selection of different metal leaf products... and some size to stick them on with

Paint the area to be gilded with size and allow it to become tacky

Lay the triangular segments of gold leaf in place and smooth them down with a soft brush

When the size has dried completely, brush off any loose leaf and apply oil or clear lacquer

BY IAN WILKIE

Super scooper

Small scoops are interesting to turn and don't use much wood. The example shown here is turned in one piece with an integral handle, but it could equally well have been made in two parts with the handle separate

SPIGOT JAWS

The spigot jaws (ref JSSP45) for the Super Nova 2 and the Nova G3 woodturning chucks cost £44.90 from Stiles & Bates. I've chosen them because they're designed to support long items where a firm grip is required. The jaws are serrated on the inside and will:

- grip onto a round spigot 41 to 61mm in diameter. I've found that the best grip is at the 45mm point;
- grip a blank measuring from 31 to 51mm square;
- expand into a dovetail hole measuring from 52 to 72mm in diameter.

The jaws shown here are an earlier version which didn't have the dovetail profile, but otherwise they're identical. They also fit the Sorby Patriot chuck.

Wooden scoops are traditional kitchen utensils used mainly for measuring out dried food, and can be made in a range of different sizes. Sycamore is a good wood for domestic use with a fine grain and an attractive light colour; beech is another favourite. I've left the wood in its natural state here, without applying a finish.

First steps

Mount up a sycamore blank 160 mm long and 50mm square and turn it between centres to form a cylinder. Form a spigot 45mm in diameter and 30mm long at one end if you're using the Nova spigot jaws (see the panel on the left) or, if you're using different jaws, to the appropriate size. Mount the blank in the jaws, **photo 1**. I like to mark the alignment with a paper dot so that when the work is re-chucked at any stage it will run accurately.

Boring the hole

Fit a drill chuck in the tailstock, insert a 35mm saw-tooth Forstner bit and tighten the chuck jaws with the key, **photo 2**. Advance the tailstock and bore the hole in the cylinder to a depth of 75mm, **photo 3**. Remember to back the bit out frequently so you can clear out the shavings. I find that a small artist's paintbrush is useful here, **photo 4**. Then check the depth of the hole, **photo 5**, and mark a line on the outside of the blank to indicate the extent of the drilled hole, **photo 6**.

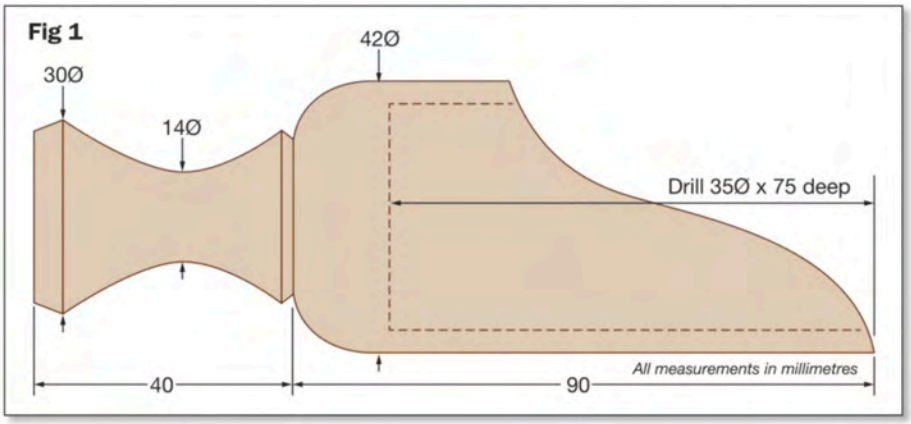
Providing support

Always use tailstock support whenever you can. Remove the drill chuck and replace it with a revolving centre that has a body large enough to support the work, **photo 7**. If you have nothing suitable, turn a plug to fit into the hole so that a smaller revolving centre has something to locate on. Cut a V-shaped groove at the line, **photo 8**.

Cutting the shape

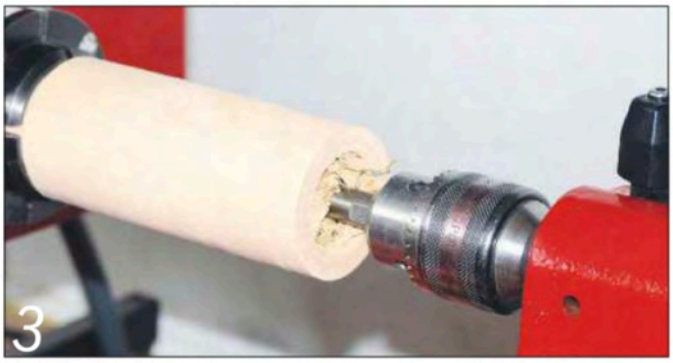
Turn off the lathe. Draw a pencil line, as shown in **fig 1**, to indicate where the wood is to be cut away, **photo 9**. Fit a good-quality No 7 fretsaw blade into a jeweller's

Fig 1

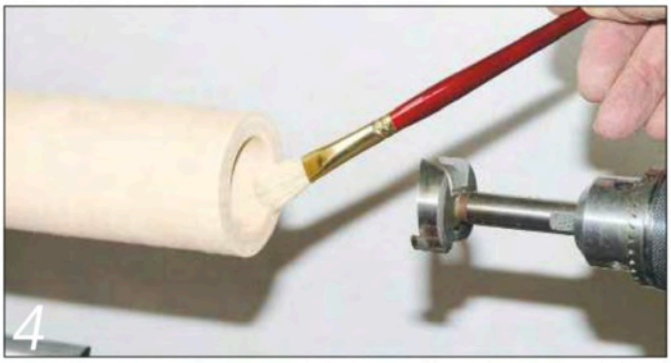


Turn the blank to a cylinder and form a spigot to suit your chuck jaws

Fit a Forstner bit in a drill chuck in the tailstock and tighten the chuck



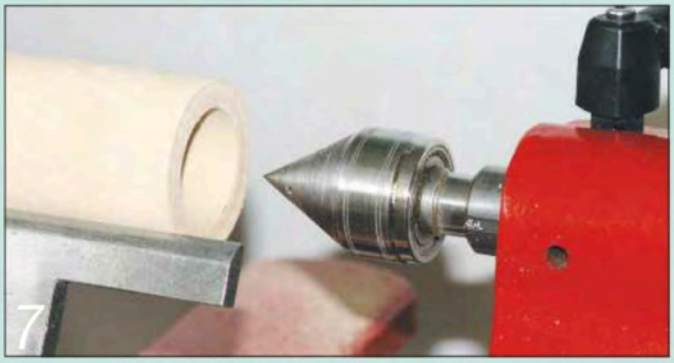
Advance the tailstock and bore a hole in the cylinder to a depth of 75mm



Remove the shavings from the bored hole. A small paintbrush is useful

Measure the depth of the hole using a depth gauge or tape measure

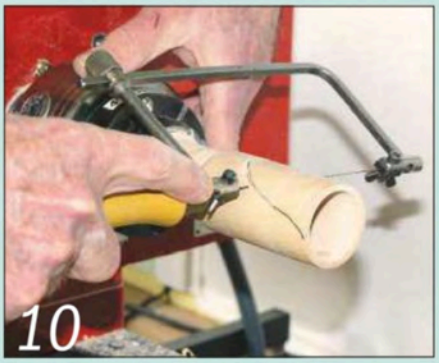
Mark a line on the outside of the blank to indicate the extent of the hole



Remove the drill chuck and fit a large-diameter revolving centre

Cut a V-shaped groove on the line to begin the shaping of the scoop

Draw a pencil line on the scoop to show where the wood is to be cut away



Fit a good-quality fretsaw blade into a jeweller's saw and start cutting

The fine No 7 blade leaves an exceptionally smooth and accurate cut

DRUM SANDERS

Carroll drum sanders come in various sizes. They're designed with a very cunning patented locking device, so you can cut your own abrasive sheets to suit the job. You can even use a piece of leather as a buffing surface. They can be held in a lathe, a power drill, a flexible drive, a bench drill or on a Kirjes-type polishing motor. The shanks vary from 6 to 10mm in diameter, so most chucks will hold them. They're accurate, vibration-free and very well made.

I've used these sanders for many years now and they've proved an extremely good buy; as you can see mine still look as good as new.

saw and cut away the marked section, **photo 10**, to leave a clean cut, **photo 11**.

Smoothing the surfaces

Start by sanding the sawn edge of the scoop to a smooth finish, **photo 12**. I'm using a 70mm diameter Carroll drum sander (see panel, left) mounted on a Kirjes motor for the outside surface. It's very important to keep the work moving all the time and not to press too hard, because the wood will easily burn with the friction and it's difficult to remove the marks on such a light-coloured wood.

A drum sander with a 20mm diameter is ideal for sanding the inside of the scoop, **photo 13**. Make sure you hold it firmly so that the abrasive doesn't snatch the work

Sand the sawn edge of the scoop smooth using a large drum sander

Switch to a smaller drum to sand the scoop's interior to a smooth finish

Use the same sanding drum to give the sawn edge a final smoothing

Shape the handle and the base of the scoop to match the pattern

Turn off the lathe, cut through the handle stub and sand it smooth

from your hands. Use the same sanding drum to give the sawn edge of the scoop a final smoothing, **photo 14**.

Shaping the handle

Remount the work on the lathe and bring up the tailstock with a revolving centre for support. The slimline revolving centre shown here is ideal. Failing this you will need to reinsert your temporary plug and tape it firmly in position. The centre pop left by the Forstner bit will locate the point of the revolving centre inside the scoop.

Shape the handle and sand it smooth, **photo 15**. Then turn off the lathe and cut through the handle stub, **photo 16**. Sand the cut end of the handle smooth and your scoop is finished.

USING FORSTNER BITS

It's useful to be able to drill a deep or wide hole accurately in a blank held on the lathe. Here's how to do it successfully.

- A saw-tooth Forstner bit needs to be sharp if it's going to produce a good, clean hole without tearing or burning the wood. You can touch up the cutting edges with a triangular file when they become blunt.
- They're expensive, so most woodworkers try to standardize on just a few sizes. If you don't have the exact size you need for a project, you can enlarge a slightly smaller hole with a hollowing-out tool. However, it will be difficult to keep the sides of the hole parallel, and the finish won't be as smooth.
- Drilling a large, deep hole is quite a strain on a lathe and there is a long, unsupported overhang, so try to match your lathe's power to the task. Always remember to set the lathe to its slowest speed; otherwise the wood will burn and crack.
- Check that the alignment of the headstock and tailstock is accurate, especially if you're using a swivel-head lathe.
- Use a drill chuck in the tailstock to hold the bit. I prefer to use a keyed Jacobs-style chuck because it gives a tighter grip on the bit's shank. A 16mm capacity keyed drill chuck with a 2MT shank costs in the region of £18 – much cheaper than a keyless chuck.
- Advance the bit slowly into the wood. Back it out from time to time to allow the shavings to clear. A build-up of shavings in the hole can cause the bit to bind or jam.
- Don't suck out the shavings with a dust extractor hose as you work, because the shavings get hot and can ignite inside the extractor. I speak here from personal experience, and I learned an expensive lesson from being careless. I began to realise something was wrong when the smoke alarm went off and I became aware of the smell of burning even through my dust mask. My vacuum extractor had a plastic body which began to melt as the dust and shavings inside ignited! I managed to get the machine out of the workshop before reaching for the fire extinguisher, but the extractor was a write-off. I made sure its replacement had a metal drum…

This tool is Makita's first foray into the world of random orbit sanders powered by 18V lithium-ion batteries.
It promises performance as powerful as a comparable mains model, plus a number of other innovations

Makita BBO180 random orbit sander

Makita have designed their new random orbit sander around a traditional profile, and by putting the slide-on battery pack to the side of the body, it retains a squatter and more controllable profile. At only 155mm high, it also allows a good firm top grip, while a rubberised throat area also allows a side grip, useful for working curves.

Speed control

Initial power is via the speed control button, with each press cycling through the speeds. There's no variable speed here, but these three speeds do give it scope, with the higher setting ideal for faster stock removal and flattening, the mid range good for finer finishing and the lower speed intended for polishing and waxing applications.

The speeds are certainly low compared to a mains model, but testing the sander on a variety of timbers it wasn't sluggish, and the finish it left is equal to that of its mains counterparts.

Plenty of power

It doesn't lack power either, and while leaning on any sander is detrimental, it carried on regardless, and in normal use on the bench, vibration is negligible. Cleaning up with a 100-grit abrasive was a bit more jerky, causing the sander to jump around. However, a swap to finer grit at the next stage meant that it glided very smoothly across the work.

The dust bag is certainly pretty efficient – good enough not to need a hose in most instances. The dust skirt around the pad is able to rotate, and the dust port can be repositioned as well, making the sander pretty versatile.

Using the sander

The speed range is maybe a little spurious, as the highest speed is adequate for polish work as well, so it's best to keep it on the higher setting for the majority of jobs. The 2.8mm orbit diameter isn't designed to win any races for removing old finishes or to gain a clean surface, but the random orbit pattern is still fast and leaves a great finish.

For large surfaces a bigger sander would be beneficial, but in general use, this palm-sized 125mm base diameter model is ideal for many applications, especially finishing work rather than bulk stock removal as it's so manoeuvrable.

£350

Summing up

Makita certainly have a winner here, especially for anyone working out and about, although the battery and speeds won't beat a more powerful mains model. However, for general finishing work, sanding fillers and cleaning up, it does a great job.

While the usual high cost of a full kit with batteries, charger and case is a little daunting, the sander is available without a battery for a third of the cost, so if you already own the batteries and use a random orbit sander regularly, this really is a cracking little tool. ***AK***

The sander is ideal for jobs such as cleaning up on location

SPECIFICATION

BATTERY	18V 3.0Ah
SANDING DISC	125mm
ORBIT SPEEDS	7000, 9500 & 11000rpm
ORBIT DIAMETER	2.8mm
CHARGING TIME	22mins
WEIGHT	1.7kg

ACCESSORIES two batteries, charger, dust bag, carry case

VERDICT

Makita have come up with a great little sander, capable of good performance.

PROS
- Three speed options
- Low centre of gravity
- Comfortable grip

CONS
- Complete kit with two batteries is rather expensive

VALUE FOR MONEY
PERFORMANCE

FURTHER INFORMATION

- Makita
- 01908 211678
- www.makitauk.com

A cloth dustbag is supplied and clips onto the extract outlet

The dust collar fits round the base, and can be rotated easily

With the battery on the side, the sander is well balanced

Most of the major tool manufacturers are using brushless motors in their flagship equipment nowadays, *so it's no surprise that Hitachi has now introduced a range of tools embracing this technology*

Hitachi DS18DBL cordless drill driver

£280
(web price)

Brushless motor technology brings far greater advantages than simply not needing to replace carbon brushes. These motors are more efficient and therefore deliver greater power for a given weight. Less power consumption means less heat is generated and battery life is extended. With motors running cooler, the need for cooling is less critical and this makes drill body design more compact and openings in the casing smaller. This in turn means that less dust can enter the motor and the working life is extended significantly.

Standard design

The DS18DBL design follows the usual Hitachi layout, with a two-position speed switch at the top, a forward/reverse control just above the on-off trigger and a variable torque control at the base of the chuck.

The chuck is exceptional; it grips well, tightens and loosens easily and operates in conjunction with an automatic spindle lock. This really does mean fast bit changes.

The standard Hitachi design has a two-speed control slider at the to

The speed change button gives an additional four speed settings

The battery check and light on-off buttons are located on the base

The high-tech charger provides cooling air to the battery

The on-off trigger gives very precise regulation of the running speed, making the driving of even very small screws fully controlled. There is a button on the side of the base that allows a sequence of four maximum speeds to be selected. This effectively means that this is an 8-speed machine.

The LED worklight is operated independently of the on-off trigger by means of a button on the front of the base of the machine. Next to it is another button used to check the charge remaining in the battery.

Using the drill

We used this machine over a period of two weeks and soon began to appreciate its light weight. The bare machine weighs little more than a typical old 12V machine, yet it delivers seemingly endless power and far greater torque.

Its compact design allows it to get into tight spaces such as between floor joists; there's plenty of room to spare with this machine. The extra power is ample for drilling through 100mm thick timbers.

Although it's not a combi drill, there's ready power available for drilling masonry… within reason. There is therefore no need to turn to another machine if you need just a couple of small holes.

The 4.0Ah lithium ion batteries lasted well. Recharge times were just under the 60 minutes stated, and with the two batteries even the most dedicated professional couldn't outrun this machine.

Summing up

This drill driver is clearly made with the professional in mind. However, the small workshop owner and DIY enthusiast will get a lifetime of faithful service from this well engineered machine.

Although the headline price seems high, it compares well to the top-end offerings from Makita, Bosch and DeWalt, and the three-year warranty, which includes the batteries, is an added bonus. If you already have another Hitachi cordless tool using slide-on batteries, then the bare machine is good value for money at £163. ***PP***

SPECIFICATION

BATTERY		18V 4.0Ah
CHUCK CAPACITY		13mm
NO-LOAD SPEEDS	low	0-400rpm
	high	0-1800rpm
MAX DRILLING CAPACITY	wood	65mm
	metal	13mm
MAX TORQUE		67Nm
CHARGING TIME		60 mins
WEIGHT		2kg

VERDICT

This versatile drill driver is a delight to use, as the brushless motor ensures an excellent power-to-weight ratio.

PROS
- Eight speed ranges in two gears
- Excellent chuck with automatic spindle lock
- Three-year warranty (including batteries)

CONS
- Expensive unless bought as a bare machine

VALUE FOR MONEY

PERFORMANCE

FURTHER INFORMATION

- Hitachi UK
- 001908 660663
- www.hitachi-powertools.co.uk

The drill is capable of tackling a huge range of drilling and driving jobs

The brushless motor keeps the size and weight down to that of a 12V machine

Squeezing between floor joists and drilling through a pair of thick timbers is easy

The high power and torque are important features in a drill driver

The perception that smaller components or miniature work don't deserve decent machinery is a massive oversight on the part of most manufacturers, *so full marks to Proxxon for exploiting this niche with machines like this*

Proxxon AH80 surface planer

£258

SPECIFICATION

MOTOR	200W
CUTTERBLOCK SPEED	6000rpm
TABLE SIZE	400 x 80mm
FENCE TILT	± 45°
MAX PLANING WIDTH	80mm
MAX DEPTH OF CUT	0.8mm
WEIGHT	5.5kg
ACCESSORIES	vacuum adaptor, push stick

VERDICT

Proxxon look towards performance and build quality first and foremost, and this machine is no exception.

PROS
- Smooth and quiet operation
- Excellent build quality
- Superb performance

CONS
- No positive stop on fence
- Price may deter some

VALUE FOR MONEY ■■■■■□

PERFORMANCE ■■■■□□

FURTHER INFORMATION

- Brimarc
- 03332 406967
- www.brimarc.com

Safety dictates that when machining wood you should keep at least 300mm away from any danger areas, and use push sticks or other feeding devices when you come close. Here, with a table just 400mm long, you have to override those safety parameters to obtain good initial pressure on the infeed side before transferring the pressure to the outfeed side.

There is a push stick provided, but it's easier to plane using common sense and keeping the pressure at the extremities of the tables. If you need to work especially short sections you should use the push stick, or else keep the work overlong for cutting to size after machining.

Small capacities

Aside from their diminutive size, those short beds dictate the work for which the machine is designed. The bed width of 80mm and a maximum cut of 0.8mm per pass puts it in the realms of the boxmaker or miniaturist first and foremost, although smaller furniture pieces, drawer components and suchlike are certainly also within its capabilities.

Fence and guarding

The 55 x 12mm aluminium fence runs the full length of the table and has a tilt option that goes to 45° in both directions. If you're concerned about work slippage on the obtuse setting, the acute way traps the stock well. This bevel function is especially useful for stave work.

There's a small cursor mark for the 45 and 90° fence settings, but returning the fence to its 90° position will require a set square to ensure that it's accurate.

Pushing stock through on edge is simple and easy to do, but flat or square stock has to pass under the bridge guard and the springing on the arm automatically rests it on the surface beds. There's a screw through the arm that will nip up the setting so you can gain a friction fit, allowing the guard to be set at a suitable height and then to be pushed down to the bed once the cut has been made.

Using the planer

The machine is very smooth and quiet in operation, and that alone instils confidence when working smaller pieces. Small as it is, you can work to its capacities easily without the feeling that it's struggling. The finish left was of high quality, but of course your own feed speed over the beds has an effect on how good this can be.

The only drawback with this little planer is the need for a thicknesser to complement it, and although Proxxon make one, the combined price (just over £700) will put a big dent in your wallet. However, not all users in small workshops want budget models, and Proxxon are picking up on a niche area with their machines very well. ***AK***

The fence tilts and locks very solidly. Its fittings are of excellent quality

The bridge guard has a sprung arm to keep it tight to the beds

The maximum capacity beneath the bridge is decent enough at 40mm

The fence will also tilt inwards, stopping the work sliding down the fence

If you want to drill perfect clean-edged flat-bottomed holes, you need to use a Forstner bit. *These two metric sets from Axminster offer excellent performance at a competitive price*

Axminster Forstner bits

When boring holes in timber, you have a number of choices as to which type of drill bit you use. The most common is the twist drill with its spiral flutes to bring the waste to the surface. There is also the auger bit, which is similar to a twist drill but has a lead screw on the front to pull the bit into the timber at a set rate. It is usually used on larger holes. Another type of bit is the flat or spade bit. These bits are popular due to their low price and their ability to bore large diameter holes, though often with somewhat ragged edges. Lastly there's the Forstner bit. Named after its inventor, this is more of a spinning cutter than a drill bit. It has a pair of cutting edges around the side and a pair of cutters across the base to remove the central waste.

Using the bits

These Axminster Forstner bits are well made and neatly presented in sturdy wooden storage boxes. The larger set has the advantage of including a depth stop to help you drill precise and accurate holes when using a hand-held power drill. All are short pattern bits. Shank diameters are 8mm up to the 30mm size, and 10mm for the larger ones.

These bits are really designed to be used in a pillar drill, because they need a fair amount of downward pressure to make them cut well. They also don't clear the waste away in the same way as other bits, so it's necessary to withdraw the bit frequently and blow away the chippings. However, they do form perfect holes with sharp well-defined edges, and they can also bore overlapping holes. They can be used to bore at any angle so long as the workpiece is secured, and they're not deflected by knots. They're also ideal tools for cutting holes for inlays or making pierced decorations – perhaps in a table rail, for example.

The cutting tip features edge and transverse blades and a lead point

Summing up

These are good-quality bit sets offering a selection of popular sizes. With an average price of around £2.50 per bit for the smaller set and £4 per bit for the larger set, they offer excellent value for money. And you'll always have the bit size you need in your tool box… ***AS***

If you need accurate, vertical holes, always use the bit in a drill press

The depth stop has three separate collars designed to fit different-sized bits

The collar is placed round the bit and secured to it with an Allen key

The stop lets you machine flat-bottomed holes to precisely the required depth

WHAT'S IN THE SETS

16-bit set
10, 12, 15, 16, 18, 20, 22, 25, 26, 28, 30, 35, 40, 45 and 50mm plus a depth stop

7-bit set
10, 12, 15, 20, 25, 30 and 35mm

VERDICT

These are two useful sets of bits with prices to suit all pockets.

PROS
- High quality
- Good finish
- Storage box

CONS
- Replacements not sold singly

VALUE FOR MONEY ■■■■■
PERFORMANCE ■■■■■

FURTHER INFORMATION

- Axminster
- 03332 406406
- www.axminster.co.uk

There's no such thing as a complete set of woodworking tools, but this kit lays the foundation for a worthwhile collection of the tools needed in any workshop. *It's an excellent starter package, making it ideal for a newcomer to the craft*

£62

The measuring and marking tools are unbranded but quite serviceable

The smoothing plane works well once the blade has been sharpened

Axminster plane and marking kit

The kit includes a smoothing plane, a block plane, a try square, a sliding bevel and a dual-purpose mortise and marking gauge. The quality is very good, and the cost more than reasonable. It comes in a wooden box with a separate compartment for each tool and a green baize lining.

The smoothing plane

This is the Axminster No 4 plane, 240mm long and fitted with a 50mm wide blade. It has all the features incorporated in the planes long associated with Sheffield, with the design being very similar. It has an adjustable frog, which in turn controls the size of the mouth, and lateral blade adjustment. The handles are polished hardwood. The sole is particularly smooth and flat, and the sides of the body are accurately machined at 90° to the sole, as they should be.

The blade does of course need honing, but once sharpened it gave perfectly acceptable results on various woods.

The block plane

This is the Axminster No 9½ block plane. It has a body 160mm in length, and is fitted with a 35mm wide blade held at an angle of 13.5°. The sole and sides of the body are finely ground, while the inner surfaces are black lacquered. The mouth is adjustable, so too the blade, with the knurled knobs being brass. Designed for use in one hand, the curved shape of the cap, and the small depressions in the side of the body, make holding and controlling the plane easy.

This is as good a block plane as is available for the price, and its performance lived up to expectations.

Try square

This is one of the really basic tools of woodworking, used for marking out and the checking of right angles. The one included in this set has a blade length of 230mm and a stock length of 100mm. The blade is blued steel, while the stock is hardwood. An unusual feature of the square is that both the inner and outer edges of the stock are faced in brass, meaning that both these surfaces can be used and relied on. This feature is very rarely seen even on the best of try squares.

Sliding bevel

Like the try square, this tool is used for setting out and testing of angles such as for a bevel edge. This bevel follows the conventional design. The blued steel blade measures 225mm and the stock is 160mm long, with both ends capped in brass. The blade is tightened by a wing nut, again of brass. A sliding bevel can be thought of as being an adjustable try square. This version does its job quite adequately.

Mortise and marking gauge

This commonplace combination tool has a fixed marker on one side of the stock, and two on the opposite side. One of these is adjustable for use when marking out mortises. The stock is faced with two strips of brass, and the tightening button and the adjustable slider are also of brass. While mortise gauges with the second marker mounted on a slider are not quite as positive as when controlled by a thumb screw at the end of the stock, the overall quality of this gauge makes it very acceptable. ***GW***

The block plane is ideal for one-handed use on end-grain surfaces

The try square's steel blade is at a true 90° to the brass-faced stock

VERDICT

This is a useful set of tools of good quality, each capable of doing a perfectly acceptable job.

PROS ■ Keenly priced tools
■ Handy storage and carry case

CONS ■ Plane blades need honing

VALUE FOR MONEY ■■■■■
PERFORMANCE ■■■■■

FURTHER INFORMATION

- Axminster Tool Centre
- 03332 406406
- www.axminster.co.uk

A bench plane is a bench plane the world over... or is it? *Many woodworkers would welcome the chance to own a smoothing plane that's a bit smaller and easier to handle than the norm, and this model from Veritas fits the bill very well... at a price*

Verita small bevel-up bench plane

£180

As with other bevel-up planes, this Veritas version sets the blade at a low angle and there's no frog. It's essentially a big block plane, but with the addition of proper handles. It has all the same attributes to keep things in place and aligned during use, with small grub screws for nipping the front of the iron to keep the skew function of the Norris style adjuster running sweetly, and a further screw retaining the adjuster when you remove the iron for honing.

Blade choices

It comes with an A2 iron which is perfectly flat from the lapping process at the factory, so it needs only seconds of work to get it ready to use. But it's the replacement or additional irons where the bevel-up style works really well. The supplied blade is ground at 25°, and the low-angle bed works well. However, for interlocked and wild grain tear-out can still be a problem, so higher-angle bevels are available in 38° and 50° primary angles.

Working long grain was fine, but it was on end grain where this plane really upped its game. Setting the cut very fine, the result was a polished grain and a superb finish.

Mouth adjustment

The plane has the same enclosed adjustable mouth as the later designs of Veritas block planes, with the front knob locking the setting once you slide it in or out. A further small screw acts as a stop to prevent the mouth from clashing with the iron. Unfortunately the screw in our sample wasn't long enough to engage the adjustable mouth, but an email to Lee Valley brought a replacement directly from Canada two days later!

Using the plane

The best feature of this plane is its ease of use and handling for smaller work. A block plane can be useful in many applications, but even the best can still chatter unless you apply firm pressure, and that can be tricky in some circumstances if you need effective pressure while maintaining fine control. Having proper grips make all the difference, and it's also light enough to hold in the usual block plane style for arrising and similar work

For most shooting work a lighter, more controllable plane such as this is ideal, if lacking the true heft of a long-body plane. The Norris adjuster is finely pitched so the advance of the iron is very controllable – a useful attribute in this area.

This plane is very adaptable, whether doing the job of a standard block plane or for standard fine finishing 'smoother' work, easily outperforming both tools in the finish it can achieve. ***AK***

The adjustable mouth is enclosed, with a small grub screw to limit the travel against the iron

The Norris style adjuster is finely pitched for controlled blade advance

SPECIFICATION

DIMENSIONS	225 x 90mm
BLADE WIDTH	44mm
BED ANGLE	12°
WEIGHT	1.25kg

VERDICT

This is a versatile plane, good for normal bench work as well as the tricky stuff, and is a pleasure to use.

PROS
- Quality build
- Superb performance
- Comfortable grip

CONS
- Wrong side grub screw fitted (but see text)

VALUE FOR MONEY ■■■■■□

PERFORMANCE ■■■■■

FURTHER INFORMATION

- Brimarc
- 03332 406967
- www.brimarc.com

End-grain planing on some lacewood gave a smooth ride with no chatter

The plane is particularly easy to control when used on the shooting board

Kits containing two or more cordless power tools are a clever way for manufacturers to persuade users to upgrade. *This set from DeWalt offers a combi drill and an impact driver, powered by the latest 4.0Ah batteries*

DeWalt DCK290M2 combo

£360

SPECIFICATION

DCD985 COMBI DRILL		
BATTERY		18V 4.0Ah
CHUCK		13mm keyless
NO-LOAD SPEEDS		0-575, 0-1350 & 0-2000rpm
IMPACT RATES		0-9755, 0-22,950 & 0-34,000bpm
MAX TORQUE		55Nm
MAX DRILLING CAPACITY	wood	50mm
	metal	13mm
	masonry	16mm
WEIGHT		2.42kg
DCF885 IMPACT DRIVER		
BATTERY		18V 4.0Ah
BIT HOLDER		¼in (6.35mm)
NO-LOAD SPEED		2800rpm
IMPACT RATE		3200bpm
MAX TORQUE		155Nm
MAX SCREW CAPACITY		8mm
MAX BOLT CAPACITY		M12
WEIGHT		1.3kg

VERDICT

DeWalt have come up with two excellent tools packaged in a sturdy container.

PROS
- All-metal gearboxes
- Long-run batteries
- LED worklights

CONS
- The combi drill is very heavy

VALUE FOR MONEY ■■■■■

PERFORMANCE ■■■■■

FURTHER INFORMATION

- DeWalt
- 0700 339258
- www.dewalt.co.uk

If weight indicates quality, the combi drill alone would be the choice of many… but in this case there certainly is quality. The chuck is a top-quality all-metal single-sleeve spindle-locked chuck, making it a weighty addition, and both the drill and impact driver have all-metal gearboxes so durability and longevity is ensured, backed up by a three-year warranty.

Maximum power

As the drill generates so much power, a side handle is included and you should certainly use it on bigger diameter holes as you can easily damage your wrist should it jam in a hole.

DeWalt have followed in Makita's footsteps with a dual collar for swapping functions and setting torque. This allows you to select a specific torque for running in fixings, and to override to drilling for masonry or timber by a quick tweak of the second collar.

A three-speed gearbox covers all aspects of drilling, with the highest speed making masonry work with smaller standard plug-sized drills a faster, slicker operation.

The double collar allows you to retain pre-selected torque settings while you drill

Use the side handle for additional support when you're drilling large-diameter holes

Both tools have excellent LED worklights for when you're working in dark corners

The combi's trigger is excellent for controlling the hole depth precisely

Bigger holes into endgrain are achieved without any strain on the drill

The impact driver's trigger is responsive, allowing controlled screwdriving

For more delicate drilling operations, a finer speed control can be attained with the responsive trigger through the respective gear ratios. However, the weight issue will play a part here; this is more a heavy-duty workhorse drill, better suited to heavy carpentry type work such as drilling out for locks rather than as a drill for pilot holes and running in fine screws, even with the easily operated torque settings. It will of course do such work, but will prove tiring to use for long periods.

Maximum impact

Swapping to the impact driver the weight issue is removed, as a kilo has been knocked off the weight compared to the drill. At only 142mm long, it also feels very balanced and controllable in the hand. But of course it's an impact driver; with just one gear you need to feel the bite with the trigger when running screws in, and it's certainly a great trigger for that. There were no problems driving screws of various lengths flush or below the surface, and supremely impressive performance running in 200mm long screws without a pilot hole – a great testimony to the 155Nm power of the driver (as well as the quality of the fixings themselves: we used the new Bullet screws reviewed alongside this test report).

Brilliant batteries

The new 4.0Ah batteries have a one-hour charge time, and with only two batteries in the kit you might think you'd be left wanting should one run out. However, after putting these two tools through a couple of decent projects that would be seen as normal duty cycles, both capacity indicators showed a drop of just one light.

You would need to be doing some pretty intense work to run one of these batteries down in a normal day's use. The beauty with lithium ion technology is that you can put them on partial charge for a quick burst of power to get you by without any detrimental effect on the battery.

Quality packaging

Manufacturers are realising tools need looking after, and an interlocking and easily transportable system is a bonus. DeWalt have a particularly robust box for their kit, featuring a foam insert to keep everything in place and protected in transit, plus a very useful storage area in the lid, accessed through a hinged flap.

Good quality screws are an essential part of a smooth-running project, and it's worth paying that bit more for them. *The Bullet brand is the latest to join the marketplace*

The optional Ammo Case (below) provides a home for a good assortment of screw boxes

Bullet screws

The first things you notice about Bullet screws are their straight shanks and their relatively coarse thread pattern. The first reduces friction, compared with a traditional conical woodscrew, while the second gives a rapid driving speed. They're zinc-coated, with a passivated yellow finish for durability in both internal and external applications, and have been treated with wax for extra lubrication as they're driven in.

The screws have a very sharp point, with a corkscrew design that makes them easy to start. Just above the tip there's a flute ground at right angles to the thread that helps dissipate heat and reduce splitting.

Coarse threading and fluted points pull the screws in very quickly

A special bit is provided with each box, matched to the screw head

The head has a ribbed profile that makes the screws self-countersinking and is extremely strong, reducing the risk of the head shearing off when the screws are being power-driven. Each box of screws includes a 50mm long high-performance Red Bullet impact driving bit with a standard hex shank. The square PSD screw head recess gives a very tight fit with the bit. They certainly go into wood like the proverbial knife through butter! They will also drive well with a standard Pozidriv or Phillips bit.

Clever packaging

Apart from the screws themselves, the packaging is worth mentioning. Each is like a small square drawer with a sleeve. It's very easy to determine which screw is which, as each box carries the metric size and its imperial counterpart. The boxes are designed to fit into a storage box called an 'Ammo Case', which costs £35.94. You pull the tear strip to remove the sleeve and slot it into the case, revealing a tab with those same screw sizes on them so you can quickly identify them. Of course, if you don't want the Ammo Case you can keep the sleeve on and use it as a normal box. ***ML***

SPECIFICATION

SIZES	12 x 3mm up to 200 x 6mm
BOX PRICES	£6, £8.40 & £18
AMMO CASE	£35.94

VERDICT

These screws and their innovative packaging are well worth considering next time you're re-stocking the screw cabinet.

PROS
- Very fast pull in
- High shear strength

CONS
- Available only in passivated yellow at present

VALUE FOR MONEY ■■■■■□
PERFORMANCE ■■■■■■

FURTHER INFORMATION

- Birchwood Price Tools
- 0115 938 9000
- www.bullet-screw.com

A bar gauge greatly reduces the chances of error by allowing you to compare or transfer measurements directly. *Most of us use two laths and a rubber band, but Veritas have other ideas…*

Veritas bar gauge heads set

£54.95

This beautifully finished bar gauge heads set is made in Canada. It's always difficult to measure the inside and outside of a drawer or carcase accurately and to make sure it's absolutely square. This set of rods and tips is designed to help compare and transfer dimensions without introducing any errors – all too easy to do with two laths and a rubber band!

The set consists of two 150mm long steel rods that pass through aluminium clamp heads, and are held in position with two brass knurled screws. These rods have threaded holes at their outer ends to accept the screw-on brass tips or extension rods which are all part of the set. The base unit adjusts from 183mm to 305mm, and two pairs of extension rods 100mm and 305mm long can be screwed on to give a maximum span of 1118mm. It is possible to extend this even more by purchasing additional 305mm extension rods at £12.85 a pair.

Different tips

Three types of knurled tip are included in the set. The ball tips are used to take inside measurements within carcases, drawers and the like where the ends of the gauge can be pressed against parallel surfaces.

The mushroom-shaped tips are designed to be hooked over the edges of any solid body to give its outside measurement; on a carcase or drawer this will include the thickness of the material being used.

The pointed tips are used to take internal corner-to-corner measurements, and to measure an assembly diagonally to ensure that it's square.

The distance between the ends of the round or pointed tips is equal to the distance between the inside faces of the mushroom tips. An inside measurement can therefore be converted easily and accurately to an outside measurement just by switching the tips.

If you need the precision that this superbly engineered gauge offers, you'll love its sleek machining and the effortless adjustments. Take care not to lose the little brass tips, though…

WHAT'S IN THE SET

Base unit
2 x 100mm extension rods
2 x 305mm extension rods
6 brass tips
(2 ball, 2 pointed, 2 mushroom)

VERDICT

You'll never need to use two laths and a rubber band again!

PROS
- Superbly engineered
- Easy to adjust and convert
- Extremely accurate

CONS
- More expensive than two laths and a rubber band!

VALUE FOR MONEY ■■■■■□
PERFORMANCE ■■■■■

FURTHER INFORMATION

- BriMarc
- 03332 406967
- www.brimarc.com

The interchangeable tips simply screw into the ends of the steel rods

Fit the ball tips and extend the rods to take internal measurements

Hook the mushroom tips over the edges for external measurements

Use the pointed tips for diagonal measurements. You can add extension rods as required

Orbital sanders are made in several sizes, but for general workshop use the ½-sheet size is the most popular. *It's big enough to cover large areas easily and can use standard abrasive cut from rolls or sheets, avoiding the need to buy dedicated abrasives*

Metabo SRE 4351 Turbo Tec orbital sander

£180
(web price)

The emphasis here is on durability. This is a machine built for hard work, and it shows. The main body of the sander is green plastic with rubber inserts on the main handle and the top. On the front is a removable secondary handle. The sander has a large trigger with lock-on button, and above it is the Turbo Boost button. There is a 25mm diameter dust extract connection and a filtered dust box is supplied.

Sanders obviously produce a lot of dust, and you want to avoid this getting into the machine and clogging up the works. This model has a neat rubber gasket which seals the joint between the motor and the sanding plate to keep it all clean.

The sanding plate itself is a solid alloy construction with a pair of substantial spring clamps to hold the abrasive sheet in position. It can also accept Velcro-fastened abrasives. The plate is perforated with dust extraction holes, though no perforating tool is supplied – an annoying oversight with a tool of this price.

As you might expect, the Metabo is a highly efficient tool. The abrasive is easy to attach with the excellent end clamps. The machine runs smoothly and the motor is powerful. You can set the speed using the wheel on the front, and when you want a bit of extra power you simply press the Turbo Boost button. This switches the motor to maximum power and overrides the variable speed setting.

The dust extraction is also impressive. So many sanders have cloth dust bags that just let all the dust come straight through, whereas this filter system really works and manages to collect the dust neatly. Of course you can also connect it to a vacuum extractor if you prefer.

Summing up

Sanders might not be the most exciting woodworking machines, but they are vital. This is an extremely good one, that's solidly built, powerful, efficient and designed for serious work.

Strongly sprung metal clamps secure the abrasive sheet to the pad

The filtered dust bag is a simple push fit on the extraction port

The filter in the dust bag is extremely effective at trapping fine dust

A front handle is fitted, but the sander can also be used single-handed

SPECIFICATION

MOTOR	350W
PAD SIZE	112 x 236mm
SHEET SIZE	½-sheet
NO-LOAD SPEED	6000-11,000rpm
ORBITAL SPEED	8400-22,000rpm
ORBIT DIAMETER	2.2mm
WEIGHT	2.7kg

VERDICT

This new Metabo sander has all the power you could need, combined with rugged build quality.

PROS
- Solid build quality
- Versatile abrasive system
- Effective integrated dust extraction

CONS
- No plate for perforating abrasives

VALUE FOR MONEY ■■■■■□
PERFORMANCE ■■■■■■

FURTHER INFORMATION

- Metabo
- 02380 72000
- www.metabo.co.uk

WOOD SUPPLIES, AUCTIONS, COURSES & EQUIPMENT

WOOD TURNING & SPECIALIST SUPPLIES

WOOD SUPPLIES, TOOLS & EQUIPMENT

SHOP GUIDES

MAIL ORDER
NARROW BANDSAW BLADES
MANUFACTURED TO *ANY* LENGTH
PHONE NOW FOR QUOTATION OR PRICE LIST
TRUCUT
Spurside Saw Works, The Downs,
Ross-On-Wye, Herefordshire HR9 7TJ
www.trucutbandsaws.co.uk
Tel: 01989 769371
Fax: 01989 567360

TOP QUALITY – LOW PRICES
VSM – VITEX ABRASIVES
KK532F Starter Pack (4 Metres) £12.95 inc. VAT and UK post. ½ metre each of grits 80, 120, 150, 180, 240 320, 400, 600
Also the NEW * *GRIP - A - DISC* *
Power Sanding/Finishing System
Plus lots of Belts, Discs, Stars, Low cost KK114
We also stock WOODTURNERS SUPPLIES
Timber/Bowl Blanks/Tools/Waxes/Finishes
Glues/Chucks/Glassware/Cutlery/Sundries.
SAE FOR CATALOGUE
Jill Piers Woodturning Supplies
2 Kimberley Villas, Southmill Road,
BISHOPS STORTFORD, HERTS CM2 33DW
Tel/Fax: 01279 653760

BERKSHIRE
WOKINGHAM TOOL COMPANY LTD
97-99 Wokingham Road
Reading, Berkshire RG6 1LH
Tel: 0118 966 1511
www.wokinghamtools.co.uk
H. P. W. CS. BS. A. D. MO.

KENT
Sidcup
GEORGE HIGGINS (SIDCUP) LTD
George Higgins Ltd
83 - 85 Station Road
Sidcup, Kent, DA15 7DN
TEL: 0208 300 3161 FAX: 0208 302 7606
Open: Monday - Friday 8.30am-5.30pm
Open: Saturday - 9.00am-3.00pm
HITACHI BOSCH DRAPER metabo trend

LEEDS
GEO SPENCE & SONS LTD
105 Wellington Road
Leeds, Yorkshire
LS12 1DX
Tel: (0113) 279 0507
Fax: (0113) 263 6817
Open: Mon-Fri 8.00am-5.00pm
Sat 8.00am-12pm
H. P. W. CS. MF. A. D. MO.
STANLEY DRAPER BOSCH

LEEDS
D.B. KEIGHLEY MACHINERY LTD
Vickers Pleace, Stanningley,
Leeds, LS28 6LZ
Tel: (0113) 257 4736
Fax: (0113) 257 4293
www.dbkeighley.co.uk
P. A. CS. BC. MO.
JET SIP SEDGWICK

SCAWTON SAWMILL
- Kiln Dried Oak
- Delivered Nationwide
- All thicknesses 20mm-100mm
- Phone or Buy online

Compare our prices at:
www.scawtonsawmill.co.uk
01845 597733

WEB GUIDE

WEALDEN TOOL COMPANY
Router cutters
Spindle tooling
Bandsaw, jigsaw & circular sawblades
Online catalogue & ordering
www.wealdentool.com

DIAMOND SHARPENING & BARRIER CREAM

www.**StarkieSharp**.com
The Diamond Sharpening Specialists
with more than 30 years first hand experience!
New Sharpening Website!

- More Information
- Easy Navigation
- Personal Advice
- Better Prices
- Special Deals
- Visit us at 40+ Shows! (See website)

Diamond Sharpening Perfection!
StarkieSharp + DMT = Money Wisely Invested!

FREE*


BeeProtX®
No More Cracked Stained Hands!
Our amazing Beeswax Barrier Hand & Foot Cream works fast healing your cracked hands & feet. It penetrates deeply moisturising your skin and is non greasy. It's also water, chemical, oil, acid and dirt resistant so protects your hands from getting stained & chapped. **Perfect for woodworkers. Try some!**

Order online & quote Code:SSTWW5 at checkout to get a FREE 1oz BeeProtX® Beeswax Barrier Hand & Foot Cream worth £7.95 * with any DMT® order over £24.94. Or Call Free 0800 0588 911 & ask for a call back from Richard Starkie to help choose which DMT® is best for you.

Richard Starkie Associates, SSTWW5, www.StarkieSharp.com
Timber Cottage, Wistow, Leicester, LE8 0QF Email:sales@starkies.com

MUSICAL INSTRUMENT MAKERS

Musical Instrument Makers' & Repairers' Supplies
TOUCHSTONE TONEWOODS
Largest selection of tonewoods, tools & parts in the country.
Visit our website or order our catalogue. Callers welcome
Touchstone Tonewoods, Albert Road North, Reigate, RH2 9EZ
Tel: 01737 221064 Fax: 01737 242748
www.touchstonetonewoods.co.uk

CLOCKS

Christopher Milner Woodworking Supplies
1,000+ product lines in stock
Clock & Accessories (Quartz & Mechanical), Barometers, Thermometers, Cabinet Furniture, Screws, Plans, Kits, Polishes, Adhesives, Abrasives etc.
FREE catalogue available
(Dept WW), Beresford Lane, Woolley Moor,
Nr. Alfreton, Derbys DE55 6FH
Tel/Fax: 01246 590062
milnerwoodwork@aol.com

HERMLE / KIENINGER MECHANICAL CLOCK WORKS.DELIVERED EX STOCK
Also available. • Dials • Quartz • Brassware
Martin H Dunn Ltd
The Clock Gallery Clarkes Road,
North Killingholme, North Lincolnshire DN40 3JD
www.martinhdunn.co.uk
FREE PRINTED CATALOGUE
Showroom Open Mon- Fri 10am - 5pm. Sat 10am - 4pm
Tel: 01469 540901

To advertise here...
Call David on
01993 709545

MARKETPLACE

Our FREE classified advertisement service

Send or email a photograph of your item and we'll include it with your ad for FREE!

FOR SALE

Hold-Heet glue pot, electric automatic model with aluminium liner, as new, offers overt £100.
0121 554 0062 (Birmingham)

Axminster 24in dovetail jig, model DTJ24, never used, complete with full instructions and router cutter; £35. Buyer collects or delivery at cost.
01276 473169 (Surrey)

Record Power WRM200 mortiser, chisel capacity 6-25mm, complete with stand, in good condition; £395.
07703 348561 (Leicestershire)

Oak and mahogany, planed ¾in and ⅞in thick, sizes include 8ft x 16in, phone for details.
01745 855570 (North Wales)

Clark site saw, 2hp motor, 12in blade, 3 in cut, 4in extract port, as new condition. Call for more details.
01666 838080 (Wiltshire)

Record combination machine, model Maxi 26, in good working order, will email photos if required; £300. Buyer collects.
07779 483023 (South-west London)

Hardwood sale including mahogany, rosewood and ash, turned pedestals and chair legs; also sheets of veneers. Offers please.
01937 842412 (West Yorkshire)

Trend Airshield Pro respirator, unwanted gift, brand new in unopened box; £180.
020 8248 0335 (West London)

Faithfull bandsaw, three-wheeled model, 14in throat, 3in depth of cut, with 6in disc sander attachment, very good condition; £70.
01695 422138 (Lancashire)

Wooden moulding planes by Mathieson, 12 available; offers.
07753 233445 (Highlands)

Kity combination machine comprising circular saw, spindle moulder, mortise, surface planer and thicknesser; £150.
01920 821731 (Hertfordshire)

Coronet No 1 lathe fitted with a GEC motor; £80. Masterchuck system chuck; £40. Nine woodturning chisels; £40 each.
07850 330653 (Worcestershire)

Tyzack bench saw / planer thicknesser, cast iron, choice of single or 3-phase motor; best offer.
01795 830302 (Kent)

Axminster ½in router; £60. Bosch Flexcut carver, new; £120. DeWalt DW733 planer thicknesser; £250. Evolution circular saw; £45. Multico mortiser plus chisels; £60. Nutool mitre saw; £10. Tormek 1200 Supergrind; £130.
01379 740971 (Norfolk)

Hegner scrollsaw, Multicut S2 model, very little use so as new; £400.
01777 870309 (Nottinghamshire)

Motorised saw bench, cast iron, excellent condition; £150. Buyer collects.
01609 760551 (North Yorkshire)

Axminster chuck, brand new 1in x 8tpi K10 Clubman model complete with key and type C dovetail jaws; £70.
01793 695644 (Wiltshire)

Variable-speed lathe, 500-2000rpm, 1100mm between centres, 370mm swing, little used; £90.
01622 208964 (Kent)

Delta 10in table saw, model 36-525, with large extending table, full-length fence, mitre guide, stand and instruction manual; £100.
07846 060331 (Leicestershire)

DeWalt radial arm saw, TCT blade, cross-cutting, ripping, grooving, angle cuts, compound cuts; £215 ono.
01484 606168 (Yorkshire)

DeWalt 738 bandsaw, little used so in nearly new condition, excellent working order, buyer to collect; £250
01245 237305 (Essex)

Kity Bestcombi – circular saw with TCT blade, planer thicknesser, spindle moulder, slot mortiser, single phase (1hp), floor stand with wheels; £450 ono
0191 236 5139 (Tyne & Wear)

Tyzack saw/planer, cast iron, choice of 3-phase or single electric motors, best offer, buyer collects.
01795 830302 (Kent)

Coronet Major saw bench, 4½in planer, mortiser, all a bit rusty but serviceable; £30
01304 830061 (Kent)

WANTED

Spiers / Norris planes wanted by private collector; top prices paid for quality tools.
01530 834581 (Leics)

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

Woodworking tools: planes by Norris, Spiers, Mathieson, Preston, Slater etc, brass braces, interesting rules and spirit levels; top prices paid, auction prices beaten.
01647 432841 (Devon)

USE THIS FORM TO BOOK YOUR FREE AD

The Woodworker MARKETPLACE

- This space is available only to private individuals wishing to buy or sell woodworking machinery and tools.
- The maximum value of any item for sale must not exceed £500. A small fee is payable for items offered at over £500; please ring 01689 869852 for details.
- Each coupon is valid for one free insertion in the next available issue.
- The publisher accepts no responsibility for errors or omissions in this section.

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

PLEASE TICK: FOR SALE ❑ WANTED ❑

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

Name _____

Address _____

_____

Postcode_____ Daytime tel no._____

Signature _____

Please write your advertisement in BLOCK CAPITALS and send it to: The Woodworker Marketplace, MyTimeMedia Ltd, Hadlow House, 9 High Street, Green Street Green, Orpington, Kent BR6 6BG. You can also email your free ad to: thewoodworker@mytimemedia.com Send/email a photograph of your item and we'll include it with your ad for FREE

It's early April as I write this, but the weather hasn't yet cottoned on to the change in season. It's rarely been above freezing of late, and today we had six inches of snow which we had to dig out just to get the workshop door open! Needless to say I haven't been doing much woodwork of late, but this has given me time to do a bit of thinking…

The danger of fire

Our workshop is a timber building. This has made it easy to remove internal walls to change the layout and to fit insulation. However, the big downside is the fire risk. We can't fit smoke alarms because I'm told fine dust particles in the air can trigger both optical and ionisation detectors. There are heat sensing alarms available, but they work only if they detect a blazing fire or if the room temperature gets above 50°C, which would almost certainly be too late to save a wooden building. In fact fire could spread very rapidly and get out of control very quickly, even if we were in the workshop when the fire started, so we have a number of fire extinguishers on hand just in case.

A powder extinguisher is the best all-rounder for workshop use

Keeping your powder dry

By the entrance door we have a small dry powder extinguisher (**photo 1**). This type will fight most small fires, and is recommended for vehicles and home use as well as for small workshops. Its big advantage is that it can be used safely on electrical fires. If you're going to have only one extinguisher in your workshop, this is the one I'd recommend.

The extinguisher contains a powder – often sodium bicarbonate or ammonium phosphate – which smothers the fire and helps to prevent re-ignition. Once it's been discharged there'll be clouds of dust in the air. In a confined space this can be disorienting as well as creating breathing difficulties, so you need to make sure you have a good escape route planned and are able to get out of the room as soon as the extinguisher has been used.

Let us spray

By the stairs up to our wood storage loft we have a 9-litre water fire extinguisher (**photo 2**). This much heavier than an equivalent dry power extinguisher and more awkward to use, but for a wood fire it has a big advantage over powder in that the water will soak into the material on fire, cooling it and helping to prevent re-ignition. Also there are no airborne particles to worry about. However, water extinguishers aren't amazingly efficient, and care needs to be taken that they're not used near exposed power cables.

When I replace this extinguisher I'll get one which has a chemical additive added to the water. This increases its fire fighting effectiveness (by as much as 300 per cent) and also makes it safer to use near exposed power cables.

This water extinguisher will soak burning wood and prevent reignition

Fire-fighting foam

Water extinguishers shouldn't be used on oil fires, so we have installed a foam spray extinguisher next to the finishing room (**photo 3**). This has become a bit redundant as we've largely moved over to water-based finishes, so we have a second dry powder extinguisher above it.

Foam extinguishers are much more awkward to use than other types. To work properly the foam should be sprayed just beyond the fire and then built up in a layer working backwards over the flames. This is a bit counter-intuitive, and in an emergency this type is often less than effective simply because it's not used properly. Let's hope we never need it…

A foam extinguisher is best for oil fires, but is awkward to use

Safety first

Even if you have an extinguisher, you should never try to use it unless you're confident that it's safe to do so, as your own personal safety is paramount: after all, you can always build a new workshop. So if you're in any doubt about whether to try tackling a fire yourself, get out, close the doors to reduce the amount of air getting to the fire, and call the fire brigade.

Let's sit down and talk

Owing to its complex nature – often disguised as apparent simplicity – the chair remains the ultimate test for designers and makers. Just look at these...

The pleasing sight of shelves groaning under the weight of past volumes of *The Woodworker* fills me with great reassurance: all that knowledge and learning is at my disposal. It also tells me that perhaps the archivists could do with a new bookcase or two, but my very reasonable quote for a new library fit-out is another matter entirely.

Pick and mix

This month I've randomly selected (and is there any better method of selection?) *The Woodworker* volume 69 from 1965. Pretty much the first page I chanced upon was this one here. I don't know about you, but I could live with any one of these pieces of seating in my luxury waterside apartment.

CHIPPY HEATH "HILTON" TELEPHONE SEAT
Rosewood finish and metal legs.

CHAIR DESIGNED BY N. O. MOLLER
Available in Bangkok teak or rosewood, with cord or ox-hide seat.

ENGLANDER "BERGEN" ROCKER
Aeropreen polyether foam upholstery. Displayed at the Design Centre.

HILLE UNIT SEATING
Designed by Robin Day, R.D.I., A.R.C.A., F.S.I.A. Two foot square units available in various combinations.

WOODWORKER, APRIL 1965

121

They're part of an article entitled *Furniture from the Cabinet Trade*, which shows various items from the 1965 Furniture Show. Presented as an interesting comparison with the Victorian work shown in a previous issue of *The Woodworker*, the Scandinavian influence on chairs especially can be clearly seen, although the UK is more than adequately represented by the Hille seating unit. This smart L-shaped couch was designed by Robin Day, internationally famous both as a designer in his own right and as part the celebrated design team he made with his wife Lucienne. Day worked closely for 20 years with long established furniture manufacturers Hille, their biggest joint success being the Polyside polypropylene school chair first produced in 1963 and still being made today.

I'm on the phone...

The telephone seat is a sight seldom seen in homes these days, although they often come up for sale in the vintage and retro shops round my way. The idea of a designated telephone sitting area must be something of an amusement for our younger readers, but there was quite a good market for this item of furniture back in the day when tethered telephones were all that was available. The one illustrated here is the best selling brand of the time, Chippy Heath, and is a really luxurious top-of-the-line model with chrome-plated steel legs, leatherette upholstery and rosewood veneer. If anyone's got one of these, please let me know as I'd love to see one... and possibly buy it.

Mark

More from The Woodworker archive next month...

woodworks

Carving, Craft, Pyrography and Toy Making
all in one place

We carry in stock the Razertip Pyrography Machines and parts,
including the fantastic range of Tips.

Single pen machine
Interchangable tip pen & cord
1 tip
3 lengths of tip wire
£150.00
(includes vat and delivery)

Double pen machine
2 Interchangable tip pens & cords
2 tips
6 lengths of tip wire
£225.00
(includes vat and delivery)

We are also main stockists of FOREDOM®.
We carry the full range of machines and spares

K.5240 Woodcarvers Special
Foredom's Legendary SR Flexi shaft motor
(which is fully CE compliant, as depicted by the red label)
Foot operated speed control
H.44T Hand piece with
3/32", 1/8" and 1/4" collets
26 piece Accessory kit
Rotating Burr holder
Frank Russell 3 DVD Set
Shaft Grease
£274.95
(includes vat and delivery)

You can also add a Double
Motor Hanger for only
£26.00
(normally £39.00)

A Family business, giving family service and family values

Order online at

www.woodworkscraftsupplies.co.uk

or phone on
01633 400847
Woodworks Craft Supplies, P.O.Box 102, Caldicot NP26 9AG

Introducing the Best Value 12" Bandsaw on the Market

5 YEAR GUARANTEE

The BS12 is built to offer exceptional performance and value for money. Our brief was to create a machine that could compete in the entry level market whilst offering better features and performance than most of the competition and apply our 5 year guarantee with absolute confidence.

BUY ONLINE

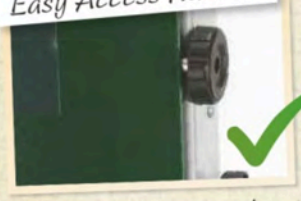
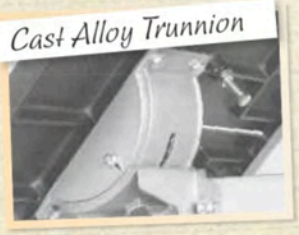
STILL ONLY £369.99 Inc. VAT

Includes leg stand, basic wheel kit and mitre fence.

Prices valid until 31.08.2013. E&OE.

The BS12 at a Glance...

In addition to offering unbeatable value for money, the BS12 12" Bandsaw boasts numerous features not often seen on machines in this price bracket.

BS12	Other Bandsaws
Easy Access Handles  The doors can be opened easily without the need for tools.	**Tool Required**  A far less convenient solution.
Easy-Adjust Guides  A superior design, similar to our premium bandsaw range.	**Standard Guides**  Provide less support and require tools to adjust.
Improved Access  The large table insert makes access and adjustment very easy.	**Limited Access**  Most bandsaws feature smaller table inserts, restricting access.
Steel Rack & Pinion Trunnion  This type of trunnion allows one-handed operation, giving excellent support and accuracy.	**Cast Alloy Trunnion**  More difficult to adjust accurately, requiring two-handed operation.

RECORD POWER ESTABLISHED 1909®

www.recordpower.co.uk Tel: 01246 561 520

Over 100 years
Experience • Knowledge
Support • Expertise

RECORD POWER
STARTRITE
CORONET
BURGESS

Incorporating some of the most famous brands in woodworking, Record Power have been manufacturing fine tools & machinery for over 100 years. Built to last we provide support for thousands of machines well over 50 years old, which are still in daily use. Testimony to the sound engineering principles and service support that comes with a Record Power product.