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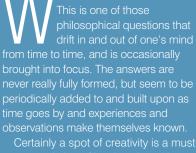
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where the joy of taking up a new piece and quickly shaping it is unmissable in finished item is almost incidental. Often woodworkers come to the craft from another discipline when they've had to make a model (or a jig or a former or something), and they've been captured grained timber just like the rest of us.

#### Reasons to make things

they wanted to.

I'd like to add a small note to greatly appreciated. If you know your recognize that unstoppable drive. on the challenge!

#### Warr in peace

was *The Woodworker*'s woodworker, and contributed to the magazine – and for over 50 years. He was working on projects and reviews right up to the end.

Gordon encapsulated all of the positives mentioned above. He was a wanted to share it with as many people as I strongly suspect he'd rather we just Gordon; you brightened all our lives.



You can contact Mark on mark.cass@mytimemedia.com



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## Woodwor

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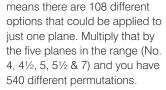
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## In brief...

#### **CUSTOMISED PLANES**

Axminster Tools & Machinery has just introduced a new and innovative range of Veritas bevel-down bench planes. The range, which is made in Canada but put together to make complete planes in the UK, allows the owner to select from a number of different components and build their own unique plane.

There are two blade options (O1 and PM-V11), six variations on a rear tote, three for the front knob and three



Parts for the planes can be purchased online at axminster. co.uk or from one of the company's seven stores. Once potential users have selected the components, trained staff will assemble the plane. It can then be taken away from a store or will be despatched in the normal way.



#### **BRAND NEW BLADES**

Irwin Tools has recently expanded its circular saw blade portfolio. The Marples Woodworking Series has been designed with woodworkers in mind, and boast a longer life, flawless finish and ultimate precision thanks to brazed teeth and laser cut design. The range comprises 28 products, ranging from a rake angle of -5° to 15°, with either alternative top bevel (ATB) or triple chip grind (TCG) toothing, a tooth count of 24 to 100, diameters of 216 to 305mm and kerf thicknesses of 2.5 to 3.2mm. Prices start from £15.

#### A FEIN COLLECTION

To give users even more versatility, Fein has just launched a promotional MultiMaster set that includes the FMM 350 Q and 41 accessories, all housed in a Systainer tool case with a modern T-Loc system that's compatible with Systainers from other manufacturers. It combines outstanding portability with excellent value.

The brand new MultiMaster 350 Q has 35 per cent more power than its predecessor, yet produces 70 per cent less vibration and 50 per cent less noise. The

comprehensive assortment of 41 accessories is the same as supplied in Fein's MultiMaster TOP set, allowing the user to tackle a wide range of cutting, sanding, grouting and dust extraction applications.

The MultiMaster Systainer Edition is priced at £251.94, and is available from specialist retailers until 30 June 2015. www.fein-uk.co.uk





The new Bosch FlexiClick system comprises the GSR 18V-EC FC2 cordless drill/driver and a series of clever adapters. The driver has a hex bit holder that can be used with all standard bits, and is the only screwdriver in its class to have a bit lock function. The drill chuck adapter takes drill bits up to 13mm, and when it's fitted the tool head is only 205mm long – ideal for working in tight spaces. Add one of the two angle adapters or the rotary hammer adapter, and you've got an incredibly versatile tool.

Each of the four adapters is connected by placing it on the FlexiClick interface and turning it clockwise. Repeated clicking then ensures a secure connection, and the tool is ready to use. The complete kit, supplied with two 4.0Ah batteries and a charger in an L-BOXX case, costs £550.

www.boschpowertools.co.uk

#### **GO-ANYWHERE SAW**

Festool is expanding its current 18V 'unplugged' cordless range with the launch of a new compound mitre saw system, the HKC 55. Designed to produce fast, precise and clean cuts, the HKC 55 features a brushless EC-TEC motor and comes with a powerful 5.2Ah high-performance battery pack. The balanced weight distribution and the intelligent angle and depth adjustment also help the user to work efficiently.

The new FSK trimming rail is available in three different lengths. A rubber spring, which is integrated within the rail, automatically brings the HKC 55 back to the starting position, ensuring that the saw is always ready to use for the next cross-cutting operation.

For more convenience and safety when sawing, the HKC 55 is equipped with a hinged cover. A lever inside the machine causes the pendulum hood to slide back. This provides a clear view of the saw blade and enables easy sawing, even when performing mitre cuts.

For maximum cutting performance and high cut quality, Festool offers three new cross-cut, rip-cut and fine-cut saw blades, especially adapted for the HKC 55.
Thanks to FastFix, the saw blades can be changed quickly and easily.

The HKC 55 benefits from Festool's all-inclusive service and is available to buy from June 2015. The starting price is £326.40.

www.festool.co.uk/hkc





## In brief...

#### **TRITON T12 COLLECTION**

Triton's newly-expanded T12 range combines precision engineering with enough power and torque for every drilling, driving or fastening application, and now features cutting and sanding capabilities too.

Equipped with the latest Mabuchi motors and robust all-metal gearing, these compact tools are powered by two efficient 1.5Ah Li-ion Samsung-cell batteries. The one-hour charger included delivers a rapid 30-minute charge to 80 per cent capacity, keeping downtime to a minimum. Built-in LED worklights provide clear visibility in murky conditions, and the comfortable moulded grips allow easy handling and control over extended periods.

The T12 range already includes the T12DD drill driver and the T12ID impact driver,

which are available singly or in a twin pack costing £145.55. The range is now being extended with the following new tools:

- The T12OT oscillating multi-tool (illustrated, £108.63);
- The T12AD angle drill (£108.95);
- The T12RS reciprocating saw (£107.12);
- The T12FL swivel-head torch (£64.62). The Triton T12 range is available now from all Triton stockists.

www.tritontools.com

#### DIARY

#### JUNE

#### **Axminster Skill Centre courses**

- 13 Sharpening with Tormek
- **15-16** Beginners woodturning
- 22 Kitchen door jointing
- **23** Kitchen worktops
- 24 Festool demonstration day
- 24-25 Adirondack chairs \*
- **26** Pyrography: Ben Beddows
- 30 Introduction to Leigh jigs \*
- \* Course held in Sittingbourne, Kent Unit 10 Weycroft Avenue, Axminster EX13 5PH

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#### John Boddy's courses

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#### West Dean College courses

**24** Make a country-style stool West Dean College, Chichester, West Sussex P018 00Z 01243 811301 www.westdean.org.uk

#### **SUMMER OFFERS**

The BriMarc Tools & Machinery Summer Offers leaflet is now available. There are savings to be made on a number of top brands including Jet, Tormek, Titebond and Flexcut

Package deals are also popular this summer. The Proxxon carver with Flexcut slipstrop and gouges or the long-neck angle grinder with Arbortech mini blades will provide hours of creative pleasure for woodcarvers and model makers. For those who enjoy making small, intricate items or jigsaw puzzles, the Proxxon DSH 2-speed scroll saw would be a good purchase. To request a copy of this leaflet, please call 0333 240 6967 or visit www.brimarc.com.



#### A SEAT IN THE STALLS

Furniture design house Dovetailors has been commissioned to build new choir stalls for Wakefield Cathedral, following its successful project to design a new altar and ambo as part of a major refurbishment of the historic West Yorkshire place of worship.

During the design and manufacturing process, the Dovetailors team has extended an open invitation to members of the church community to visit its workshop in Leeds to see the project progress.

Creative director David Wilson said: "We're extremely sensitive to the fact that these choir stalls will serve the community for many generations to come. They will reflect the same character and warmth as the other pieces we've made for the cathedral, and will be an intrinsic



part of the building's personality and future heritage."

David said the design and manufacture of the choir stalls had been a complex project. Due to their size, the finished choir stalls have been hand finished and oiled in the Dovetailors showroom, giving visitors to the shop a chance to see the firm's latest furniture design project take shape. www.dovetailors.co.uk

#### **TURNING SEMINAR**

Every two years the Association of Woodturners of Great Britain (AWGB) holds a seminar to bring the very best in international woodturning to both turners and the general public. The 2015 Seminar, taking place in Loughborough on August 7-9, will feature five overseas turners - Ashley Harwood, Cynthia Gibson and Michael Gibson (all from the USA), Ambrose O'Halloran (Eire), Jean-Claude Charpignon (France) – and five from the UK – Nick Agar, Mark Hancock, Carlyn Lindsay, Mark Sanger and Andrew Hall.

Traders will be offering everything for the woodturners' workshop, and there will also be an Instant Gallery of turned objects that can be viewed freely by delegates and the general public. This is always a huge draw, showcasing the vast range of high-quality work.

Places are limited, so to book online please visit:

www.awgb.co.uk/seminar-booking/







## What's new from



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

#### MT18 LTX OSCILLATING CORDLESS MULTI-TOOL

MANUFACTURER: Metabo

**D&M GUIDE PRICE:** £264.95 with two batteries

Metabo have joined other leading manufacturers by adding a cordless multi-tool to their range. The MT 18 LTX is fast and powerful, thanks to the combination of a large oscillating angle of 3.2° and VTC electronics to maintain constant speed even under load. The tool holder is industry standard, so is compatible with other makes of accessories, and the tool has extra-bright double LED lights for good visibility of the working area. This is an indispensable tool for interior construction work such as cutting, sanding and scraping. It comes as a body-only option or complete with two 18V 5.2Ah Li-ion battery packs, a charger and two blades in a carry case.



#### DLX2040SPE 18V BRUSHLESS TWIN-PACK

MANUFACTURER: Makita

D&M GUIDE PRICE: £475.99

To celebrate their 100th anniversary, Makita have launched a range of metallic blue special-edition machines with black MakPac cases. It includes the DLX2040SPE 18V LXT two-piece brushless combo kit, comprising the DHP481Z two-speed combi drill, the DT129Z 18V impact driver, two 18V 5.0Ah Li-ion batteries, a twin-port charger with a USB port that provides 1.5A for charging smart phones, tablets and other devices, plus two Type 3 MakPac stacking cases.



#### **TS 216 240V 1500W TABLE SAW**

**MANUFACTURER:** Metabo

D&M GUIDE PRICE: £449.95 including stand and wheels

Metabo have added a new lightweight table saw, the TS 216, to their range. This saw is so light it can even be carried in one hand! It's available with or without an integrated die-cast aluminium frame which can be unfolded in a matter of seconds, but can be folded



#### DCR006 XR 10.8-18V BLUETOOTH SPEAKER

MANUFACTURER: DeWalt D&M GUIDE PRICE: £64.95

DeWalt have launched a compact and robust Bluetooth speaker, which plays streaming audio from any Bluetooth-enabled device. It's equipped with two 50mm speakers to provide high-fidelity audio, and the integral roll cage provides impact resistance for maximum durability. A 3.5mm auxiliary port allows for connection to portable audio devices. It accepts 10.8, 14.4 and 18V XR Li-ion batteries.





## Eastern promise

I was asked recently to make a garden bench that was oriental in style and had some form of centre table attached to it. An internet trawl threw up numerous design ideas, and eventually I found inspiration. Here's the end result

Ithough this bench is designed primarily as a two-seater, it will comfortably seat three if the table is omitted. I chose iroko as the timber owing to its superb durability and golden colour, although this will gradually fade to a silvery finish. The end result is an attractive and comfortable bench that should last for many years.

#### Where to begin

Start by marking the outline for both rear legs on the timbers and cut their profiles. Plane away any saw marks and finish with abrasive paper, photo 1. Then mark out all the mortises; remember that there are handed pairs on much of the bench. Use a mortising gauge to mark out the mortises,

ensuring that they're centred on the timber where appropriate. Use a pencil to mark the relevant mortise depth on each piece, photo 2, as they vary from part to part.

Note that the lower back rail is flush with the front face of the rear legs. The back slats are also flush with the front face of both the upper and lower back rails. To complicate things a little more, the back slats are tapered so careful marking out is essential, photo 3. When marking out, allow for 5mm deep shoulders on each tenon.

#### The back rail mortises

Cramp the upper and lower back rails together to ensure everything lines up accurately. Remember that the mortises are narrower in the upper rail owing to the tapered slats. Cut all the mortises in the upper and lower rails using a mortise machine set to a 20mm depth of cut, photo 4.

To ensure that the mortises are centred on the timber, I use a slightly smaller chisel than required, position the table so the cutter is aligned with the long edge of the mortise, and cut the slot. I then turn the timber round and, without altering the table settings, cut the remainder of the slot from the other edge. The result is a mortise cut bang on centre every time.

#### Cutting tenons one way...

After marking out each tenon on the end of the timber, I first remove most of the waste on the bandsaw, photo 5. The mortises for the tapered slats are cut to a little over 20mm in depth. A bearing-guided rebate cutter such as the 1/2 in Trend 46/390 cuts a rebate just less than 20mm. When this has

ORIENTAL BENCH CUTTIN	G LIST			
All dimensions are in millimetres				
Part	Qty	L	W	т
Front leg	2	650	65	65
Rear leg	2	950	110	65
Side rail	4	550	65	50
Central seat support rail	1	600	65	50
Armrest	2	650	65	50
Front/rear seat rail	2	1600	65	30
Seat slat	6	1650	65	30
Upper back rail	1	1800	65	65
Lower back rail	1	1600	65	30
Back slat	8	400	65	30
Central back rail	1	900	120	30
Table frame	4	400	50	30
Table central slat	1	400	65	15
Table outer slat	2	400	50	15





Mark the outline for both rear legs on the timbers and cut their profiles



Make a note of the depth of cut on each mortise as their depths vary



The back slats are tapered, so careful joint marking out is essential



Cut the mortises in the upper and lower rails using a mortise machine



Remove most of the waste wood to create a slightly oversize tenon



Then use a rebate cutter in the router table to cut accurate tenons quickly and easily



Note the use of the support piece of mdf to prevent the router tipping over



Make an mdf template of a back slat and stick it to the workpiece



Cut away the waste wood on the bandsaw using the template as a guide



Then use the bearing-guided trimmer to give the slat a fine finish



11

Use the angle of the slats to mark the cutting angles on the centre back rail

Use a try square to mark the location for the end of the mortise



been fitted to a router table, the depth of cut can be set accurately to produce a tenon that's a perfect sliding fit into the mortise. By turning the timber onto its edge the shoulders are cut just as easily, photo 6.

#### ...and another way

I cut the large tenons on the ends of the lower back rail using a different method, as the ½in Trend router cutter is far too small. I mark out the tenon and remove most of the waste on the bandsaw as before. Then I cramp a piece of mdf on the marked line, fit a bearing-guided trimmer to a router and set the required depth of cut.

Using the router to trim the thickness of the tenon (and also to cut the shoulders square) guarantees an accurate fit into the mortise, photo 7. Make sure that the workpiece and the mdf guide are securely cramped to the work surface.

#### **Cutting the back slats**

As mentioned earlier, the slats are tapered. Make an mdf template in the shape of a slat, photo 8, and fix it to the workpiece with some double-sided tape. Remove most of the waste on the bandsaw, photo 9, before using a bearing-guided trimmer in the router table to clean up the edges using the template as a guide, photo 10.

Now for a trial run. Assemble the eight slats into the upper and lower back rails and use a straightedge to check that the tenons on the ends of both rails line up with each other. It is important that no glue is used at this stage. Just cramp the rails together to check that the slats are flush with the front face of the rails.

#### Finishing the back

The large opening between the two groups of back slats is filled with a horizontal piece to which the table will be fixed later. This central back rail is secured to the two slats flanking it with mortise-and-tenon joints, cut using the following method. Position the uncut rail behind the slats and centre it between the upper and lower rails. Either draw a pencil line on it against the edge of the slats, or use an angle finder to record the angle, photo 11.

This central rail needs to be cut at this angle on both ends, but must be 38mm longer than the gap between the slats as the bearing-guided rebate cutter used for the tenons cuts a 19mm rebate. Make further pencil marks on the edge of the slats to show the extremities of the mortise, photo 12. Then cut the tenons on the ends of the rail using the rebate cutter and adjust them to fit into the mortises cut in the tapered slats.

#### Preparing the frame parts

The two end frames are straightforward to make using simple mortise-and-tenon joints. However, the various components need some preliminary shaping before assembly.

The armrests taper very slightly on the underside towards the rear leg. A shallow dip is also cut along the top of the armrest to make this part a little more comfortable. The under-hand curve at the end of the armrest is best cut on the bandsaw using an mdf template, **photo 13**, followed by trimming the curve with the bearing-guided trimmer. Remember to cut downhill with the grain to avoid any snatching of the timber, and to use the lead-on guide pin on the router table.

The top edges of the rails that support the seat slats are gently curved to provide a more comfortable seating position.

Remember to cut these curves before gluing everything together; it's much more difficult to do afterwards!

#### Assembling the frames

When you're satisfied that everything goes together well, glue and cramp the frame components together using an exterior-quality adhesive such as Titebond 3, **photo 14**. Repeat this to assemble the other end frame.

Cramping the end of the armrest curve can be tricky, but taping a softener or scrap piece of carpet tile in place will protect the end of the curve. When the adhesive has thoroughly dried, remove the cramps and give the frames a thorough rubbing down with fine abrasive paper to achieve a good finish.

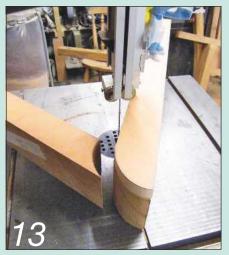
#### Fitting the long rails

The two seat rails and the lower back rail can now be glued in their respective positions, **photo 15**. Don't glue the upper back rail in place yet; instead fit it in place dry as an aid to ensuring that the end frames are square. The centre back rail and the two slats supporting its ends can then be glued in place, followed by the other slats, **photo 16**.

Next, cramp the central seat support rail in place between the front and rear seat rails and attach it using suitable exterior-quality wood screws. For a neat finish, drill 10mm holes to a depth of 10mm in the rails and then drill pilot holes on through each rail into the end of the support rail. Drive home the screws and fill in the holes with plugs cut from an iroko offcut, **photo 17**.

#### Shaping the top rail

This rail, which up to now has simply been a square section of timber, can now be



Make a template of the curve at the end of the armrest to aid cutting it to shape

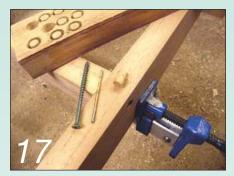




Link the end frames with the lower rails and dry-fit the upper back rail



Glue the centre back rail and the two slats supporting its ends in place



Screw the centre seat support rail in place and plug the counterbores



Remove the cutter's top bearing and trim the top rail before flipping it over



Replace the bearing and finish the trimming from the opposite side of the rail



Glue and cramp the upper back rail in place; use softeners to protect the timber



The table frame has no right angles; it's narrower to the rear and wider to the front



The three tapered table slats are glued in place in their angled frame

The front of the table is supported by a short wedge-shaped leg





shaped to give it its characteristic oriental look. Make an mdf template of one half of the rail that can be flipped over to repeat the pattern on the other half. After removing the waste on the bandsaw, use the large bearing-guided trimmer to trim the timber to the profile of the template, photo 18.

As the ½in Trend 46/501 cutter isn't long enough, simply remove the top bearing and trim the timber before flipping it over, replacing the bearing and then trimming from the opposite side, photo 19. Repeat this process for the other half of the top rail. When this stage has been completed, the top rail can be glued in place using cramps to hold the joints tightly together, photo 20.

#### Adding the seat slats

The six seat slats can now be cut to length and screwed in place to the seat rails. Use a scrap of wood planed to 21mm to ensure the spacing is equal. The front slat needs to be trimmed to fit between the front legs. For a neater finish, screw the slats in place from underneath via counterbored screw holes so the screw heads are concealed.

#### Making the table

The centre table is an optional useful accessory that can be omitted if you want a three-seater bench. The joints are mortises and tenons, cut as before using the Trend bearing-guided rebate cutter. Note however that the table has no right angles in it. It is narrower to the rear and wider to the front to give slightly more seating room towards the rear of the table, photo 21, so the joints have to be cut at an angle.

The three table slats are tapered slightly to complement the backrest design, and are glued in place in the frame, photo 22. A small wedge shaped from an iroko offcut supports the front edge of the table, photo 23. It is screwed into the underside of the table frame and to the centre seat support rail. Screws covered by wooden plugs secure the rear edge of the table to the lower back rail. Note that this edge will need to be bevelled slightly with a wood plane to marry up with the slope of the backrest.

#### Finishing off

Finish is a matter of personal choice. Iroko, sometimes known as poor man's teak, is a naturally oily wood with good weather resistance. However, it will very quickly start to go silver in colour, although this process can be slowed down by the regular application of a suitable finish. I used three coats of Ronseal hardwood finishing stain in a clear finish, and time will tell how well this works. I'm certainly impressed so far!





BY MARK CASS

## The Great Beam

This is the extraordinary story of how an extremely large driftwood log was tracked, salvaged, transported and used in the construction of a house with a unique design feature



A large chain bridle is secured to one end of the safely beached log Photo: Barry Perkins



The log contained dozens of huge nails that had snagged ropes and torn nets Photo: Barry Perkins

ape Cod in Massachusetts protrudes from the North American continent's shoreline like a crooked arm shaking a defiant fist at the turbulent Atlantic ocean. Home to literally thousands of shipwrecks dating from pirate days to modern vessels, the area abounds in strong tides, lethal reefs and sandbars. Such tides bring a huge variety and number of all manner of fish, including tuna, shark and of course, the aforementioned cod.

#### Monsters of the deep

Deep waters on the ocean side of this narrow peninsula have historically encouraged the great white shark to visit, and it's at nearby Martha's Vineyard that the film Jaws was located and shot. Fans of classic literaure may be aware that this was also the embarking point for Ishmael, who joined Captain Ahab on his self-destructive search for the whale Moby Dick. However, this story is not about giant fish, but more about giant driftwood, or to be precise, one specific giant drift log...

#### The go-to guy

John Holland is a highly skilled carpenter born and raised on Cape Cod, and is currently earning a living there building, repairing and modifying the many timber buildings that help give this idyllic spot its undeniable charm. Having built an enviable reputation – as well as more than a few houses - John is something of a 'go-to guy' in these parts, and has been carpentering since leaving school, training mostly in framing and roofing.

I was lucky enough to meet him when I was visiting the Cape a year or so ago, and there I learned of this extraordinary enterprise which John undertook some while back.

#### The trail begins

John first spotted the giant redwood log a few years ago, washed up on one of the many beaches that line the low-lying spur of land. It was gone the next day before he could get hold of it, and ever since he'd been keeping a weather eye out for its return.

There's a great deal of competition for found and recycled resources on the Cape - marine salvage is especially sought after - and it really is a case of finders keepers when it comes to beached bounty. The occasional, tantalising glimpse of the log would be reported from friends and locals, but it wasn't until a year or two ago that he



The beach crew did their best to help the boat to get the recovery under way Photo: Barry Perkins

got word it had landed on a beach in the large bay that the Cape has created. It was a case of all hands to the pump - and quick!

#### Getting a grip

In life, prompt action can generally be relied upon to pay dividends, and John was soon down at the beach with some willing helpers and a fishing boat standing by. The log came in at 45ft (about 14m) long, with a girth of 6ft (2m), so a few strong lads would be needed to rope it up and help it off the beach and back into the sea.

A willing wet-suited volunteer swam out to the waiting fishing boat, and returned with





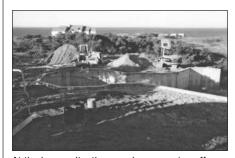
The fishing boat *Hizzoner* set off with the giant log now safely in tow Photo: Barry Perkins



John collected the log in Cape Cod Bay and headed back to Pamet Harbour... Photo: Barry Perkins



 $\ldots$  where it was beached, winched a shore and loaded onto a trailer rig



At the house site, the massive concrete coffer dam foundations went down...



...and the house began to take shape. There's no timber shortage in the USA!



The log – soon to be The Great Beam – was carefully craned into the sky...



...and slowly lowered inch by inch towards the huge gable end walls of the main house



Each end had to be fitted into a circular cutout in the timber-framed gable



With one end in position, the other was carefully threaded into its cutout



The Beam is currently playing both a starring and a (roof) supporting role



A spare beam supports the joists for the floor above the kitchen

the tow rope which was brought up the beach to the waiting log. A chain bridle was secured to one end, then made fast to the rope. With the fishing boat at slow speed ahead, the log was soon back in the water, but this time it wasn't left to the mercy of time and tide.

#### Coming ashore

Manoeuvring a log such as this wasn't an easy job, but with the right tackle and equipment it's surprising what can be achieved, especially in a community which spends much of its working life in and around water and is no stranger to a rope. After landing the log at Pamet Harbour (about a third of the way down the peninsula), its days of roaming the high seas were at an end. It was destined to become The Great Beam in a luxury beach house that its owners had asked John to design. With The Beam as a focal point in the centre of the house, John proposed a pair of tapered octagonal towers at each side of the building.

#### **Construction begins**

Before long, the foundations had been laid and the house soon started to take shape. John had collected an ace crew together including some of the area's top carpenters and craftsmen - and spent a great deal of his own time on site.

Such a huge timber always had to be more than just another component in the building, so it was designed to run from front to back and support the central pitched roof. After a bit of a clean-up and the removal of the assortment of snagged ropes and nets, The Beam was duly craned and manhandled into position between the gable ends at the front and back of the house.

Keen to display its awesome length to all who would view it, John deliberately left the interior open, and decided to divide the central chimney stack into two rather than obscure The Beam inside a wall of brick. This, and many another architectural flourish, is one of many distinctive features that always accompany a John Holland house. I've put my order in.



The finished house features twin chimney stacks and octagonal tower wings



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BY KEITH SMITH

## Sleeping beauty

The brief was to create a bed that looked as if it had come straight out of an expensive boutique hotel. However it had to be practical too, with as much concealed storage as possible

ur customer had found several desirable beds on the internet. She liked aspects of each one but none in its entirety, and wanted me to produce an amalgam, taking the best of each design and melding it into one.

#### **Design considerations**

The first step was to check what sort of mattress would be fitted in the bed – in this case a Tempur foam mattress, so we didn't need to worry about a sprung base. As about half the depth of the mattress would



The top panels have a 30mm strip of mdf glued to each short edge to stiffen them



I fitted a central divider down the middle of each pod to stiffen the structure



Each of the two base pods is assembled using biscuits to join the panels



The bed's side rails are stiffened with softwood glued and linked with plywood stretchers



The mattress frame sits in top of the two base pods and overlaps them all round



The foot rail is attached to the side rails with two large triangular plywood braces

be housed within the bed base, I took careful measurements of the mattress so I could create a good but not too tight fit.

The second step was the under-bed storage; good drawers at the foot end and doors at the head was the brief. There's not much point putting expensive drawers at the head end when a bedside cabinet would prevent them from opening, so we decided on a pair of doors to each side so that one door could open in front of the bedside cabinet and the other would then only be opened when absolutely necessary. For the bottom drawers we would use full-extension undermounted runners.

The third step was to decide on a

headboard. Ideally she wanted it to be integrated into the bed structure so it would be firm and secure. She wanted some padding but not a fully padded cover, so I decided to go with three smaller panels.

Lastly, the room was quite small, so I suggested that the base should be set back behind the edge of the mattress. This would help to create the effect of the mattress floating above the base; on a more practical note, it would also help to prevent any chance of a stubbed toe!

#### Starting the build

I decided to use a mix of plywood and mdf for the main construction and melaminefaced mdf for the drawers. A bed like this is going to be heavy (and I mean really heavy), so it was designed to be made up from several individual parts and then assembled on site.

The two base pods are largely identical, and I started out by cutting their parts out from 18mm mdf. The top panels have a 30mm strip of mdf glued to each short edge, photo 1. This will stiffen the top and provide something for the drawers and doors to close against. It will also create some clearance between the doors and drawers and the mattress housing.

The next step was to mark out the bed parts for biscuit location and then to cut the

#### Boutique bed WOODWORK



The last slat is double width to give extra support if someone sits on the end of the bed



I glued small softwood blocks to the side rails between the slats to act as spacers



The back of the headboard is cut to size and shape from 12mm mdf

slots. Each base has a vertical divider to add strength and rigidity to the base, **photo 2**. With a project like this, with a lot of similar parts, it's vital to mark out the location and orientation of each joint before assembling the pods, **photo 3**.

#### The mattress housing

The two bed rails were made from 18mm ply for strength. I screwed and glued a length of 50mm sq softwood onto these, and added a similar piece of softwood to the foot rail. I then screwed two stretchers to the underside of the softwood rails, **photo 4**, using M6 bolts and captive nuts so they could be easily disassembled.



I then made mitred panels from 18mm mdf to fit over the plywood base sides



I fitted mdf mouldings round the headboard and cut a piece to fit across the bottom

To make extra strong corner joints at the bottom of the bed, I glued and screwed two large triangular pieces of 18mm ply to the foot rail, and then temporarily fixed this triangular brace to the side rails, again with M6 bolts and captive screws, **photo 5**. Once this was placed onto the two base pods, **photo 6**, the project was starting to look like a bed.

#### Preparing the bed slats

The next job was to cut lengths of softwood for the bed slats and loosely rest them in place. Some mattresses benefit from a sprung slat base; you can buy an inexpensive set of curved beech slats from IKEA, but our mattress didn't need this.



This support piece was then glued in place flush with the side mouldings

To add some additional support for when someone sits at the end of the bed, I fitted a double-width slat here, **photo 7**. I then spaced out the remaining slats evenly along the length of the bed, cut a number of small spacer blocks to be a loose fit between them and glued the blocks to the side rails, **photo 8**. It was essential not to get any glue on the slats themselves!

To further stiffen the mattress housing, I drilled three slats (including the wider bottom one) for M6 bolts and captive nuts so that they could be fixed in place when the bed is finally assembled. I also fitted countersunk M6 bolts and cross dowels to the bottom corners.



The moulding on the headboard continues the line of the mouldings on the bed rails



I glued three layers of curtain interlining to each panel, then stapled on the fabric cover

#### Hiding the plywood

To complete the mattress housing I made up some mdf panels to cover the plywood frame. I used a mitre lock joint to ensure that there would be no rough mdf endgrain visible on the outside face of the bed. The mitres where the sides meet the foot rail were chamfered to create a slight shadow gap. This was primarily to remove the sharp edge created by the mitre. It also has the added advantage that if the joint moves slightly over time, the resulting offset would be a lot less noticeable. At this stage the panels were loosely cramped to the ply housing, photo 9.



The drawers were made from 12 and 15mm thick melamine-faced mdf

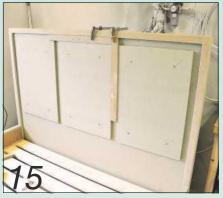
#### Creating the headboard

I started by cutting the headboard shape from a piece of 12mm mdf. Then, using a mitre lock cutter, I made an L-shaped moulding from mdf which I glued and cramped to the top and side edges of the headboard, photo 10.

To simplify fixing the headboard to the bed base, I cut a piece of 12mm mdf to fit across the bottom of the headboard, photo 11. I then glued this in place, photo 12, ensuring that it was flush with the side mouldings. As you can see in photo 13, with the headboard fixed in position, the bed rails are the same (36mm) width as the moulding around the headboard and form a continuous line around the bed.



The headboard is attached to the mattress housing with M6 bolts and D-nuts



I clamped the small panels to the headboard before drilling mounting holes through the back



The simplest way of assembling the drawer boxes was to use Miller dowels

To fix the headboard to the bed base, I used a pair of D-shaped nuts and M6 bolts at each side of the bed, photo 14.

#### Adding the padding

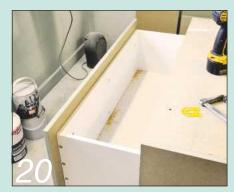
Next, I cut three pieces of 12mm mdf to make the headboard panels and temporarily fixed them to the headboard with mdf offcuts as spacers, again using M6 bolts and captive nuts, photo 15. I then removed them, carefully marking the back face of each one with its location and orientation as it was highly unlikely that I'd got the mounting holes in the same place on each panel.

I didn't think it would look right if the panels were too padded, so I glued three

#### Boutique bed WOODWORK



Undermount runners need a locking mechanism fitted into the front edge of the drawer



The plain mdf drawer fronts are simply screwed in place from inside the drawer box



I used chamfered melamine-faced mdf to form sliding feet for the bed pods



The two base pods were clamped together and joined with cabinet connector bolts



The mattress housing was then fixed to the base pods, again with connector bolts



Then the slats were loose-laid between their softwood spacer blocks



The headboard was fixed to the bed base and the upholstered panels added



The painted mdf cladding panels were screwed to the sides of the mattress base



in place and their handles attached

called 'bump') to the front and overlapping the sides, **photo 16**, before stapling the finish fabric to the back of the panel.

layers of thick cotton curtain interlining (often

#### Making up the drawers

To keep the drawers simple I made them from 15mm melamine-faced mdf, **photo 17**, and jointed the corners with Miller dowels, **photo 18**.

I'd decided to fit full-extension undermounted runners. As I was fitting false fronts to the drawers, this meant I had to notch out the drawer front to take the locking mechanism, **photo 19**. Once each drawer was fitted, I could then add its mdf front panel, photo 20.

The final jobs before painting could begin were to make two pairs of doors for the pod at the headboard end of the bed, and to fit 18mm feet to the bottom of both pods. I used melamine-faced mdf for these, and chamfered the edges to allow the bed to slide more easily over the carpet, **photo 21**.

The painting took quite a while. I used eggshell throughout – white for the inside of the cupboard, light grey for the mattress housing and headboard and a darker shade for the base. When everything had dried, it was time to dismantle things as far as possible and load up the van ready for delivery to the customer.

#### Assembling the bed

The two base pods are clamped together before being joined with cabinet connector bolts, **photo 22**. The ply mattress housing was then assembled and fixed to the base pods, **photo 23**, before the slats were laid in position, **photo 24**. The headboard was then fixed to the base and the upholstered panels fitted in place, **photo 25**.

Finally, the painted mdf cladding panels were screwed to the plywood sides of the mattress base from the inside, **photo 26**, and the doors and drawers were fitted. All that was left was to fit the door and drawer. hardware, **photo 27**, lay the mattress in place and make the bed.

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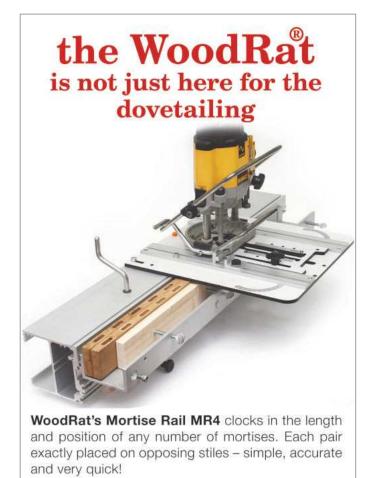
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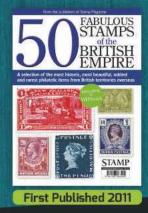


















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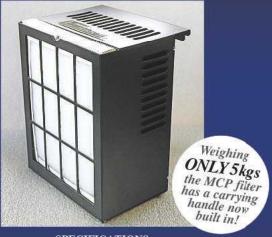
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BY MARK CASS

## Kathy tames the blade

Folding up a bandsaw blade for the first time seems like just a simple puzzle, but it's not long before the blade takes on the bizarre characteristics of a Möbius strip, only with very sharp teeth

eemingly defying the laws of physics, it's hard to believe that it's actually possible to fold the blade up inside itself. Fortunately for all of us, it is - but only once you've acquired the knack. To my knowledge it can be done in two or three different ways, but this method here, demonstrated with considerable aplomb by Kathy the apprentice, is the one I was shown years ago by a saw doctor of some repute. Once you've got it, you'll be surprised at just how easy it is!



1 Putting your best foot forward, hold the blade between your thumbs in front of the blade and your fingers behind. Wear stout gloves!



2 Start to rotate your thumbs inward and bring them closer together. The top of blade will swing in and down towards you



3 Keep turning your hands inward. With two loops starting to form, continue the downwards movement



4 Bring your hands closer together. The blade is now close to being mastered



5 It's almost down and out, but it's still dangerous so don't let go!



6 Game over, and you can feel all the fight go out of it. Now wire or tape it closed



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## **Irend anniversary**



Say Trend, and most woodworkers automatically think of routers and router cutters. A company founded by Jim Phillips as a one-man band now sells its wares all over the world. Here's a look back at how it all came about



hen Jim Phillips decided to set up a small business working from his own attic back in 1955, he quite literally started a trend that has subsequently seen several generations of tradespeople take the plunge into the wonderfully creative world of routing.

Jim is now well into his nineties and the day-to-day running of the family-owned business is in the capable hands of loyal employees, but Jim is always on hand to offer the benefits of his remarkable 60 years of experience working in the power tool and accessories market.



#### An early passion

Surrounded by the current offering of more than 8000 different product lines, all proudly displayed at the company's headquarters in Watford, Jim recalled those formative years when he considered himself fortunate to have just a single tool to sell.

"Having worked in agriculture since leaving school, a bout of ill-health forced me to reassess my employment options and, with a young family to support, I couldn't afford to dither for too long.

"From a very early age I'd always been passionate about woodworking, forever making household items for myself. I decided that perhaps I could extend my enthusiasm to local joinery companies, engineers and tradespeople.

#### Starting small

Jim continues: "Somehow I managed to convince Elu, a leading Swiss company producing a range of power tools, that I was the man to represent their interests in the UK, and the Trend Machinery and Cutting Tools company was launched from my attic.

"In those pre-IT days, selling meant long days in the car, visiting potential clients and getting to know what problems they faced and how a particular tool - in this case the plunge router - could help to make life easier in the workshop or on site. You have to remember that, back then, most joiners were still using simple hand tools which hadn't really changed that much for hundreds of years.

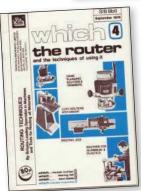
"I must have sounded fairly convincing because before long the business was expanding and I was looking for new premises and extra staff to spread the word."

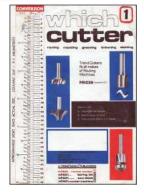
#### Asking for help

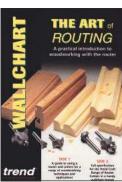
"For me the key was responding quickly to anyone who was in trouble. Builders, joinery shops and engineering businesses were all crying out for someone to consult when they ran into obstacles, or their existing equipment simply wasn't up to the job. Quite often they had been sold a tool which wasn't fit for purpose, or conversely had a very expensive bit of kit which sat idle for most of its working life.













"As a roving trouble-shooter I was quickly able to build up a picture of common problems, and I started looking at other power tools and accessories that could improve efficiency. That ethos of being a friendly advisor rather than an aggressive salesman is a philosophy installed in all our staff, and it continues to underpin everything we still do today. In fact, we'll happily tell a potential purchaser if a tool is wrong for the job and we won't sell it to them. I think people appreciate that honesty and business integrity in today's often dog-eat-dog world," says Jim.

#### **Trend Trade Centres**

Unquestionably, one of Jim's proudest moments in those early years was the opening of the first Trend Trade Centre, where a whole variety of practitioners could come and try the tools for themselves and get expert advice. This was quickly followed by a much larger centre, following a tie-up with the Elu factory in Germany, offering a vast (and then underrated) range of plunge router applications.

Jim explains: "The first time I saw an early router I was immediately struck by its versatility, although it took me some time and no little practice to perfect the art. In properly trained hands the router is, in my opinion, the most versatile power tool in the world bar none. Our challenge was to get a pretty sceptical audience to try it out, and in this respect the centres were invaluable in getting the correct tool into the hands of potential customers."

#### Becoming unique

Trend had a policy of employing extradesmen as demonstrators, and this undoubtedly added credibility to what they were teaching. From this end user feedback the company started to develop a bank of invaluable information, and this in turn lead to its design team coming up with its own products. After sixty years, the lofty ambitions of one of the power tool market's most endearing and enduring characters has been well and truly realized with a series of special accessories for the router, which give Trend a unique position in the marketplace today.

#### **Trend setters**

By the late 1970s, the company decided to focus almost exclusively on the router. Even greater possibilities presented themselves in the early 1980s, with a world-beating range of router machines coming out of Elu. Trend was ideally placed to supply the extensive network of Elu tool distributors

with a now comprehensive range of complementary cutting bits and routing accessories

Today, the Trend Product Guide is recognised the world over as the bible of routing - a source of reference for professionals, colleges and a surprising number of weekend hobbyists. Professional Builder magazine had a taste of the phenomenal interest in routing back in the mid-nineties when a monthly 'Rout and About' technical column regularly attracted more than a thousand enquiries a month. Updated to similar enthusiasm in the early 2000s, it remains the most popular regular feature that's ever appeared in the magazine's 35-year history.

For a time too, Trend also got in on the publishing act, producing books on routing and their own 'How To' journal. The company has always placed a great deal of emphasis on communicating with customers through informative technical books, trade press articles and product brochures, catalogues and, of course, more recently, online forums and website videos.

#### Sixty years on

"I never doubted that we were on to something pretty exciting with the router all those years ago, but I must admit that even I am more than a little surprised at just how popular the tool and its associated accessories have become," says Jim. "After sixty years we think we have just about every option covered, but there will always be someone out there who needs something special designing for a particular cutting task and our in-house team of technicians will do their best to make it happen. In that respect I don't think there is anyone else in the world who could match us in turning a concept into a reality."

#### The trend continues

Many of those one-off products have gone into mainstream production, and the showroom is an Aladdin's cave of problemsolving jigs, cutters, blades, cramps, drills, power tools and tables.

2015 is seeing a whole new batch of innovative products launched into the marketplace, including the Scribemaster Pro skirting board scribing jig, Diamond Cross sharpening stones and a range of mini template profiler router cutters.

Like his beloved router, Jim Phillips has made the sort of deep and long-lasting impression on the power tool market that very few could ever hope to emulate. He's shown that for once, not all Trends have to come and go!



## FREE!

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Trend Tools & Machinery are celebrating 60 years in the router business, and have teamed up with *The Woodworker* to offer readers the chance to own one of these two superb routing packages, each worth almost £500. Each lucky winner will receive a Trend T10EK 2000W ½in variable-speed router and the latest Airshield Pro respirator.

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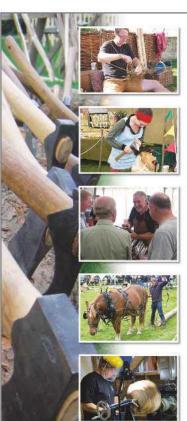




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he frames that form the ends of each of my stands measure about 850mm wide, 760mm high and 690mm from front to back. You can of course vary these dimensions if you wish, and the overall width can be made to suit the sizes of your seed trays and whatever display space you have available. If you have plenty, you can build a whole series of stands. Measured gaps between each unit will allow the seed trays to overlap, thus saving timber!

#### Make do and mend

For long life I chose to make this project from preservative-treated softwood. If you have some odd stock around it could be made from anything. The sizes aren't critical either. I had to cut some of mine down in cross-section to make the legs.

Note that in the photographs the saw guard has been removed for clarity, but should *always* be used when cutting stock.

Now cut all the components to length. Variation in the widths of the legs and slats isn't important. However, to make the later trenching process easier it's best to make all the rails the same width. You might have to



BY PETER BISHOP



# Triple decker

This project is ideal for gardeners who have limited space to give their seeds room to grow. The triple-decker stands can be used, outside or placed in a porch, greenhouse or conservatory

plane or saw them to a regular size. Once all these bits and pieces are to hand, the partial housing joints on the legs can be cut.

#### Extra strength

Cutting these housing joints to take the rails isn't absolutely necessary. A simple face-to-face joint made with glue and screws would suffice. I just like the extra strength and security of the partly recessed joint. I have the benefit of a pull-over cross-cut power saw that can be raised or lowered. This cuts the trenches very quickly, but these joints can just as easily be cut by hand.

If you're using a powered saw, start by cutting the top rail housing in each of the

legs. The depth of each joint shouldn't be more than about 12mm or so. They are there as a locking mechanism to make sure the rails are in the right place and are fixed firmly to the legs. After the top joints have been cut, use the short front leg to mark the position of the matching joint on the intermediate and long legs. With this lower joint cut, use the intermediate leg to mark out the position of the middle joint on the four longer legs. Check that the rails fit snugly into each of the joints, and the job's done.

#### **Assembly time**

If possible, tackle the assembly on a flat bench surface – it makes life a lot easier!



1 Some stock might need ripping down. Note that the saw guide has been removed here for clarity



2 The rails should all be cut to the same width for ease of trenching later on



3 This is the finished stack of cut components, ready for the housing joints to be cut



4 Check the fit of the rails in the leg housing joints, and ease them if necessary



5 The first stage of assembly is to cramp a back leg to the bench top. Its square corner is a useful guide



6 With all the legs cramped in place, apply plenty of glue and start to fix the rails



7 Drill clearance holes in the rails and drive in two fixing screws per joint



8 Cramp on a couple of slats as shown to help you space the end frames correctly



9 Glue and screw the front and back slats to each level of the structure in turn



10 Add the inner slats to each level, gluing and screwing them on



11 Space the intermediate slats by eye and use an offcut to make sure the ends are aligned



12 Add one or two cross braces if necessary to stop the structure from racking

Cramp the first rear leg onto the bench top. It helps if the bench top has a corner to it; if not, mark a square corner onto the surface and work off that. Now cramp the second rear leg to the bench top at the right spacing from the first one. I put mine 215mm apart so the rear top slat could be set to hang over the back edge by 12mm. Cramp the intermediate and short legs on square and parallel to the others. If you've

got it right each rail will now fit in place, maybe with a little easing.

Start at the top of the frame. Use glue and screws for the first rail, pre-drilling the holes in the rails to avoid splitting. Work your way down to the bottom rail, then make the other end frame as a mirror image of the first one. Set these two assembled frames to one side for a while until the glue has set.

#### Creating the shelves

The slats go on next, cut to whatever length you have chosen. Don't make them too long or they may sag under the weight of watered seed trays; mine were about 850mm long. On a large flat surface, stand one end frame up, then the other, and dry-cramp a slat across the middle of the top and bottom rails. Make minor adjustments to give an even overhang at each end.

Glue and screw the rear slat on each of the rail platforms to start with. Then take the cramps away and fix the front slats on. Apply a line of glue along the top of the rest of the rails and position the last two slats on each level by eye. Use a short offcut to line the ends of the slats up and screw them on.

When you're happy that the whole assembly is now square and standing level, leave it again for the glue to set. Later on, one or more diagonal braces can be fitted across the back inside faces of the legs to make sure the finished stand is stable.

If you wish, give the whole thing a good dose of preservative and you're then ready to start using the stand.

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Centre rail	2	460	50	25	
Bottom rail	2	685	50	25	
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* Optional; length measured from assembled frame					



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## Stackable storage boxes

John Lennon said: "Life is what happens while you're busy making other plans." The same can be said about woodworkers, who are forever planning that grand project. But sometimes it's good to tackle a simple project you can complete in a few hours, creating something useful as well as enjoying the pleasure of getting it finished

n today's modern home, storage space is at a premium. You only have to take a walk down any High Street or wander around one of the big DIY stores to find row upon row of stackable storage boxes and bins. The trouble with these is they very rarely suit the space available. The answer is to make bespoke storage boxes to fit. Using sheet material and a simple joining system, you can put these boxes together very quickly with little effort and a minimum of tools.

#### Planning the sizes

Find a space that will house the boxes and divide it up into manageable box units. Select your dimensions to suit the space you have available, but don't make them too tight a fit or it may be difficult to gain access to them!

Don't make them too big either, or they may be too heavy to lift easily. Two small boxes will hold as much as one large one!

#### Choosing materials

Use 12mm mdf, as this is relatively strong and easy to work. For storage in damp conditions, moisture-resistant mdf or good-quality plywood is a better bet. The method of construction is the same, whichever material you decide to use.

It's cheaper to buy these materials in full sheets. Some sellers will cut them down for you so they'll fit inside a car. Alternatively, there's always the roof rack option, but this is not advisable unless you have a substantial rack and the wherewithal to make the load secure. You may find that your timber merchant will be willing to deliver, especially if you're buying several sheets. If all else fails, you can buy the material in smaller sheets if you don't mind paying a premium price.

#### The first cuts

The boxes will make up with their ends showing a full-width board and no joints -



It's easier to cut up large sheets of mdf outside. Put down a tarpaulin to catch the dust



Cut the panels to size using the table saw



and a home-made cross-cutting jig



To make a template for the hand-holds, cut two holes with a 35mm Forstner bit



...and then join them with a jigsaw to complete the opening



The rough-cut hole in the panel is ready for profiling using the template and router



All the parts are joined with dowels (positioned with the Joint-Genie jig), glued and then cramped



When the glue has cured, round over all the edges to minimise chipping in the future



Glue and pin small mdf feet to the base of each box, in line with the edge of the inset base panel

a neat design feature. If you're using 12mm thick material, you'll need to make the sides 24mm narrower than the overall box depth, and the bottoms 24mm smaller all round than the overall box footprint.

Start by cutting the material to size, batch-making all the similar parts together. For example, if your boxes share the same dimensions for the sides, you can cut all the side panels in one repeat operation.

#### **Handy holes**

The next job is to make a jig to rout the hand-holds. These need to be comfortable to the hand but not over-large.

The jig is made from an offcut of mdf with a batten screwed or nailed to it to register it at the correct distance from the top edge. A centre mark is used to align the jig on the different box widths.

#### Putting it all together

Assemble the boxes using one of the many joining systems available, such as the Joint-Genie system, with 6mm dowels. You could use biscuits, but they require much more cramping and don't provide the mechanical advantage of dowels. Pocket holes or carcass screws are other options.

The advantage of using dowels or biscuits is that they are an all-wood solution, so any machining or hole cutting can be carried out after assembly without the fear of hitting a metal fixing.

After the glue has cured, remove the cramps from each box and round all the edges using a small round-over cutter mounted in a router or laminate trimmer.

#### Feet and lids

Fit each box with four small square feet, cut from 12mm mdf and with one surface rounded over. They're positioned under the corners of the boxes, in line with the edge of the inset bottom, and are glued and pinned in place. This allows the feet to lock into the top of the box below, building a stable tower.

You need just one lid per stack. They're cut from 12mm mdf to match the overall dimensions of the box, and four feet are added to lock it into the top box. All the edges are rounded over. You can add a hand hole in the centre, but it's another place to let the dust in and isn't really necessary.

#### **Finishing touches**

You can simply sand and seal the boxes and leave them plain. Alternatively, you can paint them in neutral colours for sober storage, or go mad with bright primary colours (and even a few transfers) to cheer up a dull cupboard or a child's bedroom!



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## Drill press set-up

This series is all about setting up and fine-tuning a range of popular standard woodworking machines and power tools. This month we're taking a look at the drill press

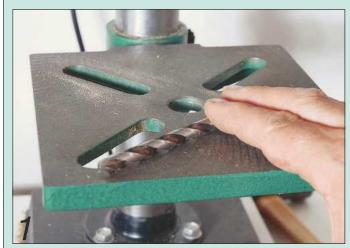
he Jacobs Chuck Manufacturing Company was founded in 1902 by A.I. Jacobs, the man who invented something we all take for granted today – the three-jaw drill chuck. It's the chuck that makes this machine so versatile. Any round shaft small enough to fit within the chuck's capacity will automatically be centred on the quill (the spindle to which the chuck is attached), providing the chuck itself is set true.

#### On the stand

It is only in recent years that the drill press has found its way into the home woodworking environment. This is due in part to the dramatic reduction in the cost of these machines. In the past the Black & Decker drill, mounted in its proprietary drill stand, was about as sophisticated as fixed drilling got. Although this arrangement was fine for boring the odd straight hole, speed control was limited (to fast and very fast) and the chuck capacity was pretty small.

#### **Pressing reasons**

There are many reasons for acquiring a drill press. The ability to bore precise, clean holes at any angle, at regular spacings, is only the beginning. The mechanical advantage of the quill's advance mechanism means that much less effort is required by the operator to bore large-diameter holes. A precise depth stop on the stand makes the boring of blind holes far more accurate than a piece of masking tape wrapped around the drill bit, but it doesn't stop there as you will see.



Check that the drill bit is straight by rolling it on the table



Use a square to check that the table is at 90° to the bit



Use the depth stop to lock the quill in the down position



Rotate the bit between your fingers to centre it in the chuck



Use a dial gauge and magnetic stand to check the run-out



Rotate the chuck by pulling the drive bands by hand

#### The right angle

The whole point of a drill press is to enable the user to bore perfectly aligned holes, usually at 90° to the work surface. For this to happen, the drill press table must be perpendicular to the axis of the chuck. The chuck must also be running perfectly centrally in the quill.

To set up the drill press correctly, start by checking that the table is perpendicular to

the axis of the chuck. To do this, select a large-diameter drill bit and roll it over the drill press table to ensure that the bit is straight; it should roll without any bumping. If it doesn't run true, try another bit until you find one that does.

Having found a straight bit, secure it in the chuck, gently rolling it between your fingers as the chuck is tightened. This will help keep the bit centred. Tighten the bit enough to

hold it firmly and then remove the chuck key, reinsert it in the next hole in the chuck and nip it up tight. The table can now be aligned with the drill bit with the aid of a square.

#### Running true

Now the table is square to the bit, the run-out can be checked and corrected if necessary. The drill chuck has a Morse Taper (MT) that is a force fit into the quill.



Tap the bit gently sideways with a hammer to align the chuck in the quill



The chuck may fall out if adjusting it loosens the taper in the quill



Remove the drill bit and close the jaws of the chuck fully



Fit the chuck back into the quill with a sharp upward movement



Give it a sharp blow with a block of wood to set it into the quill. Then re-check the alignment

This may be slightly off-centre and will cause the chuck, and therefore the drill bit, to run out of true.

Correcting this is a simple matter. You just need to work out which way it is out and then 'coax' it back into the correct position - a tap with a hammer is the preferred method!

The critical thing is establishing which way the chuck is running out and by how far it is doing so. The best way of doing this is to use a dial gauge mounted on a stand. These can be obtained reasonably cheaply (under £25) and have several other uses around the workshop, such as setting the height of planer blades and checking that the table saw blade is running true.

#### Using the dial gauge

Unplug or isolate the drill press from the mains supply and open the top lid. Set a large-diameter drill bit in the chuck and lock it down so that just the shank is above the table. If your drill press does not have a quill lock, the depth gauge can be used to prevent the quill from returning, effectively

locking it in the down position. To achieve this, lower the quill, rotate the depth stop in the opposite direction to its full extent and lock it off. This will stop the guill returning and achieve the desired result.

Cramp the magnetic dial gauge stand to the drill press table and arrange the dial gauge so the stylus is running on the drill chuck. Rotate the chuck by moving the drive belt by hand. If the chuck is running true, the dial gauge needle will remain stationary.

In reality the needle will probably bounce around a little, but the average readings should be about the same. A run-out of a tenth of a millimetre (0.1mm) would be excessive. Anything under that would be hard to correct - and frankly unnecessary when dealing with wood.

#### The block alternative

If you don't own a dial gauge, you can check the run-out using a block of wood. Rest the wood against the shaft of the drill bit and rotate the bit using the drive belt, as before. If the shaft is running out, it will push the block away from the bit and create a gap that will open and close as the bit is rotated. Measure the gap at its widest; if it exceeds a tenth of a millimetre (0.1mm), the chuck will need aligning with the guill.

To achieve this, tap the top of the shank of the drill bit with a hammer to bring it into line. If the chuck is a long way out, you may find that adjusting it will loosen the taper in the quill and the chuck simply drops out. If this happens, it was not fitted firmly in the first place and will need to be reinstalled and rechecked.

To reinstall the chuck, remove the drill bit and close the jaws. Lower the table out of the way, release the quill so that it returns to the uppermost position and insert the chuck's taper back into it. Fit the chuck into the quill with one hand and give it a sharp blow upwards with a block of wood to set it back into its taper. Reset the table and recheck the chuck for run-out as described above. If all is well, the drill press is now ready to use.

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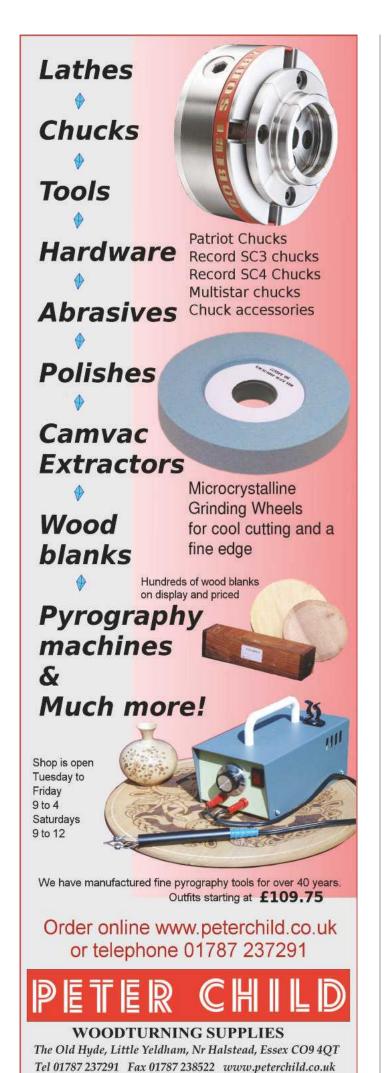
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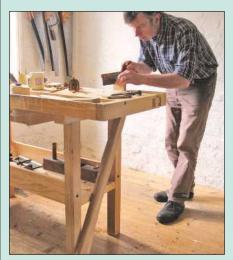
**BY ROBIN GATES** 

## A bench is for life

When we moved house last year, one of the last things I parted with was my trusty old Clarke Woodworker bench. We're now settled happily into our new home, but I miss that bench as much as if I'd abandoned an old friend

> n the old handyman books we had at home when I was growing up, I recall that The Bench was covered in the first page or two, followed by chapters on tools and techniques, and then the work began - building a cold frame, a sewing box or a kitchen cupboard. How that's now changed. With the bottomless pit of the Internet at our fingertips, our simple aims

can be overwhelmed by a mass of contradictory opinions within seconds, and the novice finds himself undertaking something like a PhD literature search before attempting so much as sharpening a chisel. What should be a straightforward business of setting up a surface to build upon can escalate into a project consuming weeks... and a small fortune.



With diagonal braces fitted, the bench was rock solid for sawing



The vice also handled larger work, such as an elm board for re-sawing



The bench brake was the ideal set-up for using a draw knife on a split log



The massive face vice held work in an immovable grip for planing



I could also rip a small board to width using a tall bench dog and a wood block

#### Advice ignored

I'm sure advice on workbenches was plentiful when I bought my Clarke Woodworker 20 years ago, but fortunately I didn't read it. Anxious to begin sawing wood and knocking in nails, my approach was simple: buy the cheapest I could find!

Yes, I could have spent more money, and you could say I broke that cardinal rule which says that you should buy the best tools you can afford, but my interpretation of 'best tool' is the tool that best suits my needs - not the most expensive. As someone then looking for an upgrade from a Black & Decker Workmate my needs were modest, and the Clarke Woodworker was a dream in a box delivered to my front door. Even better, as my woodwork interests developed I found ways of adapting the bench to keep pace with my ever-changing requirements.

#### Screwdriver and tea

Assembly was as straightforward as any flat-packed piece I'd tackled - simply a matter of building the leg frames, the shelf, the drawer, and attaching the ready-made top using the usual mixed bag of nuts, bolts and screws. Half an hour with a screwdriver and a mug of tea and the job was done. The only differences I've spotted between the bench of 20 years ago and today is that the top is now attached to the base by meatier coach screws and the vices have wooden handles instead of metal ones.

#### Vice or virtue

Ah. those vices! Two. no less - one face vice and one tail vice, so quick to use and such power after winding the little cranked handles of the Workmate. Their chunky wooden jaws combined with a handful of bench dogs offered numerous cramping permutations for tasks I'd struggled with before, and the work surface itself was at a more back-friendly height.

I'd loved my old Workmate - it was one of the originals with cast aluminium H-frames - but after years of grazing my shins while unfolding its metal skeleton it was a joy to have a bench that was all wood, standing solidly in a place of its own and ready to do some work. And the Clarke Woodworker was surprisingly tough, too, for an all-up weight of around 80lb. When a local handyman came to buy the bench last year, it was performing as well as ever despite two decades of rough treatment, and I was pleased to see it embarking on a second career.

#### Care and attention

During its first weeks I pampered that bench as though it were a family heirloom, protecting the surface from every saw tooth and drill point. However, the mollycoddling ended when a puppy arrived in our house and spent contented hours secretly chewing the vice jaws I'd been storing on the floor!

Henceforth the bench had to man up and take what family life threw at it: oily motors, kids' bicycles, household paint, garden tools, you name it. After 20 years of oversawing the mark, drilling too deeply and flicking paint everywhere, the bench top told a story as big as the Bayeux Tapestry, of battles waged and won, a 55 x 20in picture of job satisfaction, and you can't put a price on that - although I can; about £100 in around 1994, so it's cost me just £5 a year. Remarkably, the Clarke Woodworker CHB1500 is still available in 2015, and at about £155 it remains great value for anyone wanting a bench with minimal fuss.

#### Weight matters

In the quest for stability, the prevailing wisdom seems to favour weight above all else, but although there is a satisfying logic in this it isn't the only (or even the best) answer. There's no denying that the Sumo-size Roubo bench which is the current hallmark of workshop cred is as stable as an oil rig. How could it not be, with its 4in thick top, legs like the Eiffel Tower, dovetail joints as big as mallets and an all-up weight of around 350lb.

In its original context, as shown in André Roubo's 18th century work *L'Art du Menuisier* (The Art of the Joiner), the bench was an island in the middle of a vast workshop where a good deal of weight would have been needed just to stop it creeping across the floor under the lateral forces of planing and sawing. But for those of us squeezing our woodwork into the garden shed or garage, the bench typically stands against a wall – and this is actually a big advantage.

#### A wall helps

If you attach or wedge the bench to a solid wall, you effectively add the mass of your shed or garage to the body of the bench. For years my Clarke Woodworker stood wedged in the corner of a downstairs room, tight against walls to back and left of it, a situation in which the brick-outhouse construction of a Roubo workbench would have been largely redundant since the house walls absorbed the small forces of my work with hand tools.

Sometimes, when all-round access was needed, I would move the bench to the middle of the floor, and again its moderate weight proved an advantage because I could shift it single-handed. That said, I suspect I doubled its weight with all the removable ballast stored on the bottom shelf. Where assembly instructions showed a couple of shiny new tools, my shelf often resembled a corner of Steptoe & Son's junk yard with its tangle of iron G-cramps, a hefty engineer's vice and a chunk of standard-gauge railway line which I occasionally used as an anvil. I honestly can't remember where I got that from...

#### The racking problem

Moving onto rigidity, and again taking the revered Roubo as my yardstick, massive joinery is one solution, but you can also tweak the rigidity of a modern bench that's held together by bolts and screws.

In YouTube videos posted by professionals, I've noticed that even expensive benches can suffer from a



This close-up shows the workpiece held between the oak cross-bar and the elm leg



A planing stop clamped across the width facilitates planing a cherry brace

Triangulating the bench with a pair of braces cured the racking tendency

The handscrew and the holdfast make perfect cramping companions



degree of racking, which occurs when the rectangular structure is pushed out of square under sideways forces. This was never an issue when my bench was lodged in a corner, but when it stood away from the wall I found that racking was wasting a percentage of my sawing or planing effort. Tightening fastenings improved things, as did sharpening my blades, but I felt sure I could do better.

#### Thought of the day

In time-honoured fashion, the solution came to me while leaning on a farm gate and chewing a blade of grass. What held the four-sided gate rigid beneath my daydreaming bulk wasn't joints the size of Stonehenge but diagonal braces. It's called triangulation. Connecting the corners of a four-sided structure by a brace creates rigid triangles, holding all sides firmly in place. It's what keeps sailing ship masts upright and prevents bridges collapsing.



The bench brake is useful for small work too, such as this door handle taking shape



Having proven the theory by cramping battens between the tops of the front legs and the feet of the rear legs, I sized up a cherry log with a view to making the arrangement permanent. Having split the log along its length, I hewed it roughly to shape with the carpenter's axe and then flattened the faces with the jack plane. It was a glorious time, with masses of curly shavings tumbling around my feet and the sweet marzipan aroma of wild cherry hanging in the air.

#### Bench brake

They say necessity is the mother of invention, and that was certainly the case when I needed to hold the 3ft cherry braces securely for shaping with the draw knife. Experimenting with odds and ends, it didn't take long to marry the cantilever principle of the green woodworker's riving brake to the screw cramping power of the bench vice. I clamped an oak crossbar perpendicular to



The holdfast mounted in the tool well eased the planing of small boards



The tool well is useful for keeping hand tools safe, not just gathering shavings

the face of the bench at one end of the vice, and leaned an elm leg into the opposite end. Now, with one end of the workpiece pushed under the oak bar and its underside resting on the elm leg, I tightened the vice to prevent lateral movement and the workpiece was fully immobilised.

I found that this improvised 'bench brake' would accommodate anything from a log down to a wooden spoon, with the height being adjusted for comfort simply by moving the cross-bar and changing the angle of the leg.

#### A better solution

When using the drawknife this was much safer and more secure than some other arrangements I've cobbled together; worth considering if you don't wish to buy or make a shaving horse.

With green woodwork accounting for a good deal of my time at the bench, I took the opportunity to add a touch of rusticity to it and rested the drawknife when the braces were acceptably smooth. I then moved on to plane their inside faces so they would lie flat against the legs and the slightly inset end stretchers which support the tool shelf. That done, the braces were fastened in place with 3in screws, and thereafter the bench stood as rigidly and square as anything several times the price.



The holdfast and a wood block to raise the work combine for planing endgrain



A well-made bench hook is invaluable for cross-cutting small stuff



I assembled my bench hook using lots of glue and an assortment of kebab sticks

#### Getting a grip

A knock-on effect of acquiring the bench was that it provided the stimulus to bring other work-holding devices into play. One of these was a massive wooden handscrew which I'd found in a Gosport junk shop when I was a teenager and had lugged around ever since as little more than a conversation piece. Now, secured to the bench top by a large G-cramp, it proved to be an absolute marvel in enabling me to position the work exactly where needed - against the edge of the bench for sawing joints, or flat on the top for heavier work with mallet and chisel.

#### Holdfast and hook

One other device made the handscrew even more versatile - a colossal iron holdfast. This is I suspect a one-off - a smithy-made tool which again I'd bought only because it fascinated me but which I was determined would now return to work.

The problem with its installation, however, was that it required a mounting hole at least 2in deep for the shaft to wedge tight as it canted backwards under pressure from the beak - and my bench was only %in thick. Hoping to exploit its long 10in reach across the centre of the bench, I considered adding a backing block under the surface. However, that would have interfered with the drawer, which I've found very handy for screwdrivers, gimlets and the like. Then I twigged I'd been staring at the solution without realising it - the tool well itself. I could install a mounting block in there.

#### All well and good

Some condemn a tool well as a scrapgathering waste of space, but for me it has always been a safe haven for hand tools in use, all the more so when the bench is standing away from the wall and tools might otherwise be shunted onto the floor. Now, at a shade over 2in deep, a block in the tool well would not only provide adequate depth for the holdfast to wedge tight; the well space on either side of it would house the holdfast, swung to one side, when it was standing idle.

Delivering considerable down force across a wide arc, the holdfast soon made its benefits felt, whether for cramping the handscrew or bearing directly on the workpiece - in which case I'd use a sacrificial block to prevent damage from its aggressive beak. An early project was holding small elm boards for finishing with the block plane, something I'd fiddled with endlessly until now.

#### A right hook

The last thing I made should have been the first - a decent bench hook. For crosscutting small stuff this is handy wherever you work - on a bench, Workmate or kitchen table and I found good advice on making one in Cabinet Making for Beginners by Charles Hayward, a former editor of The Woodworker. Hayward said that the hook the cross batten which pushes against the edge of the bench - should be attached using wooden dowels, not screws or nails, because as the saw cuts deeper into the base board it may eventually run into the fastenings. Accordingly, I assembled mine using some dowel stock discovered in the kitchen drawer - 5/32in diameter kebab sticks. I knew they'd come in useful one day!



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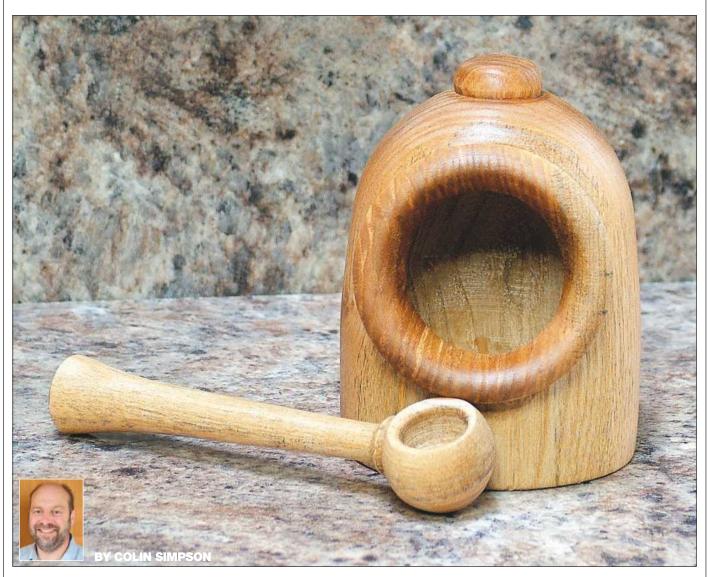
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# Salted away

In this, the third article on making kitchen treen, I've made a salt pig and spoon. This requires a fair degree of accuracy to ensure that the separate parts fit together well, and introduces a new sklill: turning on two centres

hen I started to make this piece, I wondered why this item of culinary treen was given the name 'salt pig'. Some people say that the opening on the side resembles the snout of a pig, so that's where the name came from. However, an old Scottish definition of pig is a jar or pot made of earthenware, and this is actually how it derived its name.

I've used ash for this project, but almost any wood will do. The ring on the side is quite delicate and care must be taken when turning this piece, so a dense close-grained timber is probably the best choice.

#### **Getting started**

Mount a blank 75mm square and 150mm long between centres and turn it down to a

### TURNING A salt pig



Turn spigots on both ends of the blank and part off the ring section



Turn another spigot and part off a 12mm length to form the base



Use the spindle gouge to bore a hole down the centre of the blank



Then hollow out the interior of the blank as shown using the same gouge



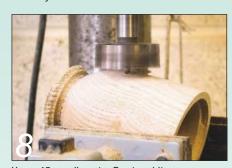
Switch to a round-nosed scraper to clean up the inside surface



Cut a small step in the bottom of the body to receive the base



Sand the interior smooth, with just one finger holding the abrasive



Use a 45mm diameter Forstner bit to drill a hole through the body



Turn a tenon on the ring blank to fit inside the hole in the body



Next, turn a rounded bead on the remainder of the ring blank

cylinder. Cut a spigot on both ends and then mount the blank in your chuck. Measure 25mm from tailstock end and part off completely, **photo 1**. This piece will become the ring. Turn another spigot and part off another slice about 12mm long, **photo 2**. This will become the base of the salt pig.

#### Boring a hole

Begin to shape the outside of the blank with a %in spindle gouge. Leave enough wood near the chuck to allow strength in the piece when you hollow out the middle. Photo 3 shows me using the same gouge to bore a hole down the inside of the piece. If you don't wish to use this method of drilling, then a Jacobs chuck in the tailstock fitted with a suitable drill bit will do the same job. Remember, whichever method you use it is important to keep removing the tool or bit from the hole to release the shavings; otherwise they might bind and jam the tool in the hole.

#### **Hollowing out**

Having drilled the hole to the correct depth, use the spindle gouge again to hollow out the interior. Start with the flute pointing towards 11 o'clock and the tip of the tool in the hole. Swing the handle away from you in an arc. The shaving should come off the tool near the bottom of the left-hand wing, **photo 4**.

Continue hollowing in this way until you have an even wall thickness of about 6mm. A round-nosed scraper can then be used to clean up the inside. Keep a handle slightly higher than the cutting edge and take gentle cuts, **photo 5**.

Use a parting tool or a skew chisel on its side to cut a small step in the bottom of the body to take the base, **photo 6.** Then sand the interior smooth. Hold the folded abrasive sheet as shown in **photo 7** and insert only one finger for safety. I didn't seal or polish the inside.

#### Making the salt hole

Remove the piece from the lathe and mount it in a drill vice on the pillar drill. Tilt it slightly so the bit is at right angles to the curved surface. If you don't have a vice, make up a V block to support the piece. Using a 45mm Forstner bit on slow speed, drill a hole through the side of the piece, **photo 8**.

#### Creating the ring

Mount the ring blank in the chuck and turn the first 12mm next to the chuck down to 45mm diameter – the diameter of the Forstner bit, **photo 9**. Next, turn a bead on the remainder of the ring, **photo 10**. Continue this all the way round to the front; then open out the front into a funnel or trumpet shape.

Bore a hole all the way through the piece and open up the funnel, leaving the wall thickness of around 3mm, **photo 11**. Then sand the ring smooth, but don't apply a finish.

#### **Testing its fit**

At this stage I did a trial fit of the ring to the base. You'll find that it sits in the hole better if you sand two small flats on the body at the top and bottom of the hole. This is easily done with a belt sander, **photo 12**; don't overdo it, though.

The tenon of the ring also needed a little shaping to make it fit flush with the inside of the body. Again, this is easily done on the belt sander, **photo 13**. Keep offering it up to the body to test the fit, **photo 14**; just a little more sanding is required here. Then make a note of the alignment of the ring on the body.

#### Sizing the base

When you're happy with the fit of the ring, mount the base blank in your chuck and clean up the face with a spindle gouge. Measure the diameter of the step in the bottom of the body and transfer this diameter to the base, **photo 15**. Turn a slight taper on the edge of the base, with the narrowest part of the taper finishing at the diameter you have just marked, **photo 16**.

Offer the body up and press it gently against the taper, **photo 17**. It should leave a slight burnish mark on the taper. I pushed harder than necessary, leaving a scorch mark so it showed up better for the camera. Now turn off the taper down to the burnish mark, ensuring that the sides are parallel, **photo 18**. The base should now be a perfect fit in the body.

#### Assembling the pig

Glue the body to the base, **photo 19**. I used superglue. Then fit the base spigot into the chuck and bring up the tailstock so you can finish turning the outside of the body using a %in spindle gouge, **photo 20**.

Next, sand the outside. Don't forget that there's a large hole in it! Keep your fingers flat or, preferably, back the abrasive with a cork block or a piece of dense foam, **photo 21**.

Now you can use a narrow parting tool to start parting off the base spigot. I didn't like the idea of holding the body with the hole in it while I parted off completely, so I stopped the lathe and made a saw cut through the rest of the stub, **photo 22**. If you do this, you'll need to do a little hand sanding on the base to clean it up.

Glue the tenon of the ring into the hole in the body of the salt pig, making sure you align it correctly, and set it aside so the glue can harden.



Continue the bead round to the front and then hollow out the ring



Shape the tenon on the belt sander to match the curve of the body



Mark the diameter of the step in the body on the base blank



Offer up the body to the base and burnish a mark on the taper



Glue the base into the body and re-mount its spigot securely on the lathe



Sand a couple of shallow flats on the body using a belt sander



Keep trying the ring in the body until you have a perfect fit



Turn a slight taper on the edge, at the diameter you've just marked



Turn the base down to the burnish line to ensure a good fit



Finish turning the outside of the body using a %in spindle gouge

### TURNING A salt pig



Sand the outside using a cork or foam block to protect your fingers



Partially part off the base spigot and finish the cut with a saw



Turn the spoon blank to a cylinder and form a ball on one end



Turn the spoon handle using the same gouge and a skew chisel



Part off the spoon handle using a slicing cut with the skew chisel



These home-made collet chucks are closed onto the work with a Jubilee clip

#### Making the spoon

Mount a blank 25mm square and 125mm long between centres and turn this down to a cylinder. Turn a ball at the tailstock end using the %in spindle gouge, **photo 23**. Try to make this as spherical as possible.

Next, turn the spoon handle using the same gouge and a skew chisel, **photo 24**, working back from the tailstock end. Sand the spoon but don't apply a finish. Part off using a slicing cut with a skew chisel, **photo 25**.

#### Clever chucking

Photo 26 shows three home-made wooden collet chucks. They are all turned cylinders that have been hollowed out and had eight saw cuts made partway down their length. A spigot at the bottom allows them to be held in my scroll chuck, and a worm-drive (Jubilee) clip around the waist closes the collet on the workpiece.

Photo 27 shows the spoon held in the middle-sized collet chuck. Adjust the toolrest and revolve the workpiece by hand to make sure it doesn't hit anything before switching on the lathe. So long as you keep all parts of your hand behind the toolrest, you'll avoid getting your knuckles or fingers rapped. Take light cuts with a small spindle gouge to hollow out the bowl of the spoon, photo 28.

I finished the salt pig and spoon with a liberal coat of mineral oil, but you could use vegetable oil or a food-safe finish instead.

You've now completed a multi-centred project and made a useful item of treen for the kitchen. More next month...



Mount the ball of the spoon in the collet chuck and spin it round



Take light cuts with a small spindle gouge to hollow out the bowl





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## **Turning for beginners**

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Alan Holtham will show you the way in this brand new series. Here's part 1...

t's a bit obvious, but the first thing a woodturner needs is a lathe. It's actually the world's oldest 'power tool' – see the panel opposite for a bit of history. As you investigate what's available, you'll soon discover that there's a bewildering choice of models, with very different specifications and prices, and it's very easy to become confused about exactly what you require. If this is your situation and you need some help, then this feature highlights the main factors you need to consider before you buy.

#### The lathe today

Woodturning has progressed enormously in recent years and is now no longer just a means of producing functional items, but is fast approaching the status of an art form. To fuel this massive increase in popularity and demand, many woodworking machinery manufacturers have hurriedly added lathes to their range, but a good machine requires a number of essential features that are often overlooked in the rush to get new equipment onto the market.

#### Cheap and cheerful

There are lots of very cheap lathes on the market that all look the same and appear to give you a lot for your money, **photo 1**. These machines are very much entry-level models, being sufficient to get you started, but if you progress much beyond very basic work you will soon find them very limited. Some even come with a stand and incorporate variable speed, but there is a definite correlation here between the price you pay and the quality you get.

#### Weight is good

As a general rule, the heavier and more substantial the machine, the better. Vibration is the woodturner's worst enemy, particularly if the workpiece is long or out of balance, and there is nothing to beat sheer weight to minimise this vibration.

For this reason, it's better to buy a lathe that is cast rather than fabricated, but this inevitably often involves greater cost. However, do remember that unlike a lot of other machines, you will often spend hours

working at the lathe. Consequently it needs to be as smooth and quiet in operation as possible, so always think carefully about the quality and buy the best you can afford.

#### Bed and swing

When you are buying a lathe, there are two capacities you need to consider. The distance between centres determines the maximum length of workpiece you can turn. For general work you will need at least 30in, and preferably 36in, photo 2. Incidentally, lathe dimensions are still mainly given in imperial measurements; for metric buffs the equivalents are 760 and 915mm. Longer beds are available, and whilst these may appear attractive, they can add to any vibration problems unless they're properly braced, so this is one instance where it is better not to buy too much capacity unless you have the specific need for it.

Another useful measurement of size is the 'swing' of the lathe, **photo 3**. This is the height of the main spindle above the bed

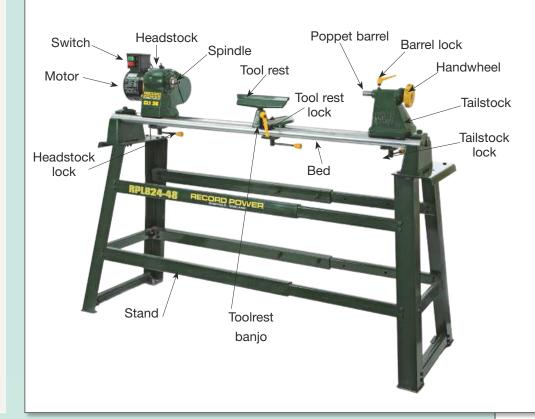
#### A LITTLE HISTORY

The origin of turning dates to around 1300BC, when the Egyptians first developed a two-man lathe. One man would turn the workpiece with a rope, while the other cut shapes in the revolving wood. The Romans improved the Egyptian design with the addition of a turning bow, and early bow lathes were also developed and used later on in Germany, France and Britain.

In the Middle Ages a pedal replaced hand-operated turning, freeing both the craftsman's hands to hold the turning tools. The pedal was usually connected to a pole, which acted as a return spring. A two-person lathe, called a great lathe, was also developed; this allowed a piece to turn continuously, as on today's power lathes. A master would cut the wood while an apprentice turned the crank.

During the Industrial Revolution the lathe was motorized, speeding up the work rate and also allowing the turning of metal. It had become a machine we'd recognize today.

Fig 1 Identifying the parts





Cheap lathes appear to give you a lot for your money



You need a distance between centres of at least 30in



The swing should be at least 9in between the spindle and the bed

and therefore determines the maximum diameter of work you can turn, unless the head rotates round. For anything remotely approaching serious work, you need a swing of at least 9in (230mm), but in practice the bigger the better.



A bench-mounted model like this will suit most woodturning beginners

#### Bench or floor mounted?

A professional turner will probably need a heavy-duty floor-standing lathe, but for the home woodturning enthusiast a benchmounted model will probably be quite sufficient, **photo 4**. These bolt down to any

convenient work surface, but this must be really solid. The advantage of mounting it on your own workbench is that you can get the centre height just right – a serious consideration if you anticipate doing a lot of turning in the future.

### TURNING Choosing a lathe



Some more rigid legstands include provision for a tool shelf



Under-bench storage helps to give a stand useful extra mass



The lathe bed is made from heavy metal bars or tubes



More expensive beds are solid castings that are almost a work of art



Some imported models have what looks like a huge headstock



The bearings should be good-quality heavy-duty ball races

#### Stands and storage

Several manufacturers provide legstands as an optional extra if you don't want to build a bench. These stands vary from a rather crude folded steel or tube arrangement, to a more rigid affair with provision for a tool shelf, photo 5. Bear in mind that the performance of your lathe depends on how well it is mounted, so buy a legstand only if it looks man enough for the job.

A homemade wooden bench is often better at absorbing vibration than a crude metal stand, and it can change the whole operation of the lathe. If you are short of space in the workshop, you can build in a lot of storage for tools or raw materials under the lathe, which also helps to give the structure a bit more mass, photo 6.

#### The lathe bed

The bed is made from either heavy metal bars or tubes, photo 7, but some machines still feature a flat cast bed. This may be quite crude on the cheaper machines, or a work of art on top-of the-range models, photo 8. Whatever the construction, it must be

strong enough to support both the tailstock and the toolrest without any flexing, and allow free and easy movement of them both. It must also permit shavings to fall through unobstructed and should sit well clear of the bench, so you can slide the tools underneath it without banging the sharpened edges.

#### The headstock

This is the heart of the machine and needs to be really solid... and preferably cast. Fabricated headstocks are rarely heavy enough if you need to turn large or out-ofbalance work. The headstock also needs to have a good spread between the bearings to ensure maximum rigidity of the spindle.

Some imported models have what looks like a huge headstock, photo 9, but when you remove the belt cover the two spindle bearings are actually quite close together. A small bearing spread like this will cause problems with rigidity, particularly on large-diameter work, so always look for a machine where there is plenty of distance between the bearings.

The bearings themselves should be good quality heavy-duty sealed ball races, photo 10. Some machines have a tapered bronze sleeved bearing which gives much greater support than ball races, although it does require occasional adjustment. However, when set up correctly this arrangement supports the spindle over a much greater length and provides totally smooth and vibration-free running, photo 11.

#### A swinging head

The headstock may be permanently fixed in line with the bed, or it may have the facility to swing round so that the spindle ends up at right angles to the bed for bowl turning, photo 12.

I would rate this swinging head as an essential feature on a lathe; the real advantage is not only for bowl turning, but also for any turning where you have to work over the bed. Swinging the head just a few degrees off-centre allows you to work with the tool handles clear of the bed, photo 13. Although you can still work off the standard toolrest with the head swung a little, for big



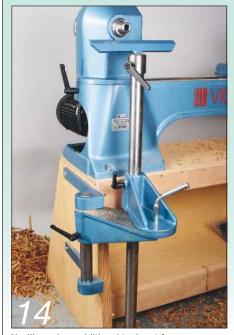
Tapered bronze-sleeved bearings give greater support than ball races



The headstock may have the facility to swing round through 90°



Swinging the head off-centre keeps tool handles clear of the bed



You'll need an additional tool rest for turning large-diameter bowls



A headstock you can move along the bed is a big advantage

diameter bowl turning you will need an additional bowl rest to maximise the capacity, **photo 14**.

If you are restricted with regards to space, many of the swinging head machines also allow you to move the headstock bodily along the bed, which is a great advantage if the end of the machine has to be up against a wall, **photo 15**.

### The spindle is key

The headstock spindle is threaded to take a range of screw-on accessories such as chucks, **photo 16**, so you need one with a standard thread or you'll be limited in the range of extras you can buy. On many smaller lathes, a thread size of ¾in x 16 tpi is the industry standard, which makes upgrading your machine less costly.

This which means that you can then take all your threaded accessories with you, rather than renewing them with the lathe when you upgrade it. This is an important point, as you will often have a substantial investment tied up in chucks and other turning accessories.

### Morse tapers

It is essential that your lathe is also equipped with Morse tapers in both headstock and tailstock. This is a universal means of installing centres and a range of other tooling, **photo 17**, and does not restrict you to using only the original manufacturer's fittings.

There is a huge range of Morse taper kit on the market, but if you buy a lathe with only screw-on fittings you are very restricted as to what you can use. Morse tapers are commonly No 1 or No 2 on the smaller lathes; the bigger the number the thicker the taper. The tapers just push into the headstock and are then knocked out afterwards with a bar that runs through the main spindle.

If the spindle is solid, there needs to be a centre ejector which screws onto the spindle nose before you insert the taper, **photo 18**. Take great with these tapers and keep them clean and undamaged, or they will start spinning inside each other, which as well as causing them damage, will lead to inaccuracies when you are using fittings such as drill chucks



A spindle thread size of  $\frac{3}{4}$  in x 16 tpi is the industry standard

### Motor and drive

A small lathe will need a motor of at least ½hp, particularly if you envisage turning bowls, but bigger is better in this case. In order to give some speed variation, the motor is usually fitted with a three or four-step pulley and a matching one on the spindle, **photo 19**, to give a speed range from about 400 to 2000 rpm. This is achieved with a belt, which is moved around on the pulleys to select the required speed. The traditional V belt has now virtually been

### TURNING Choosing a lathe



Morse tapers are a universal means of installing centres



A solid spindle needs a centre ejector screwed onto the spindle nose



A three-or four-step pulley gives a speed range of 400-2000rpm



Some lathes use cone pulleys to change the lathe speed



Modern electronic control offers infinite variation of speed

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Electronic memory functions can remember your favourite speed settings

replaced with the more efficient flat poly V type, which gives a smoother, vibration-free drive as it has no lumpy joint.

Some lathes achieve the speed variation in other ways. This may be mechanical, where a lever operates two cone pulleys, so changing their diameter and therefore the speed, **photo 20**. This system does work, but it is prone to wear belts very quickly and is rather noisy. Also, you can only change the speed whilst the lathe is running. So if you finished the last job at top speed and now want bottom, you firstly have to switch the lathe on and reduce the speed before you can mount the work, all of which is a bit fiddly and time consuming.

### **Electronic controls**

The ultimate for speed changing is an electrical speed control, which gives you infinite variation of speed at the turn of a knob. This is usually reserved for the top-of-the-range lathes, but in the past electronic speed variation has suffered from loss of torque at low speeds. Fortunately

modern electronics technology has largely overcome this problem, usually by operating a three-phase motor through an inverter off a single-phase supply, **photo 21**.

State-of-the-art electronic speed controls have memory functions that can remember a selection of favourite speeds. They can also sense incidents such as dig-ins and then instantly shut down the power, **photo 22**.

### Easy-reach switchgear

Whatever your motor type, make sure that the switchgear is easily accessible and doesn't get hidden by large workpieces. I prefer to have the switch (or at least a separate 'off' button) at knee height for emergency situations when you have both hands full. Some machines have a magnetic switchbox, **photo 23**, which allows you to move it around at will depending where you are working.

#### Reverse gear

Motors with a reverse facility are a valuable aid for sanding, and are quite safe to use

on between-centres work. However, if you engage reverse with a piece of faceplate work, there is always the possibility that it will unscrew itself, so lathes with reverse should feature a faceplate locking system.

#### The tailstock

This needs to be as substantial as the rest of the lathe, as it has to provide firm support for between-centres work. Make sure that it slides freely and locks firmly onto the bed. The tailstock barrel is moved backwards and forwards with the handwheel and needs plenty of travel for drilling work, **photo 24**. It should be bored with a Morse taper to match the headstock, and should also be drilled right through to allow for easy removal of the tailstock centres and for long-hole boring, **photo 25**.

#### Toolrest and slide

The toolrest assembly is another vital part of the lathe, the main requirement being that it is quickly and easily adjustable. The actual locking mechanism varies from machine to



A magnetic switchbox can be fixed wherever you're working



The tailstock barrel needs plenty of travel for drilling work



The barrel should be drilled through to allow for long-hole boring



A cam lock on the tool rest is easily accessible from the front



Toolrests are available in a range of different lengths; long ones need a second holder

machine; some use a simple clamp and lever under the bed, whilst others use a cam type of lock, **photo 26**, which is easier to use as it is accessed from the front of the lathe. Always check this point before you buy.

The toolrest itself needs some vertical height adjustment, and should lock into the holder with a simple handle that works effectively; there must be no movement

possible once it's locked. For general use the rest needs to be about 10in (300mm) long, and made of heavy cast construction so that there's no vibration when you are working at the end of it.

Alternative length rests are available, **photo 27**. You will probably need a shorter one at some stage. For very long work there is a rest with two stems, but this requires an additional toolrest holder.

### Making a choice

So now you know all about the lathe, how do you choose one to suit your needs?

Firstly, consider the type of turning you will be doing. If you will mostly be turning spindles, then there's perhaps no need for a swinging head model, but rigidity of the bed and good between-centres capacity are important features.

On the other hand, if you think your main interest will be bowl turning, a swivelling head is vital but between-centres capacity is less important. You'll also need plenty of motor power for big-diameter bowls.

Think also about how often you will use the machine. If you anticipate being an occasional user making a few simple furniture parts, then a basic model is all you'll need. But if you think you will spend a lot of time at the lathe as your skills and ambitions grow, then you will need the extra power and weight of a larger machine.

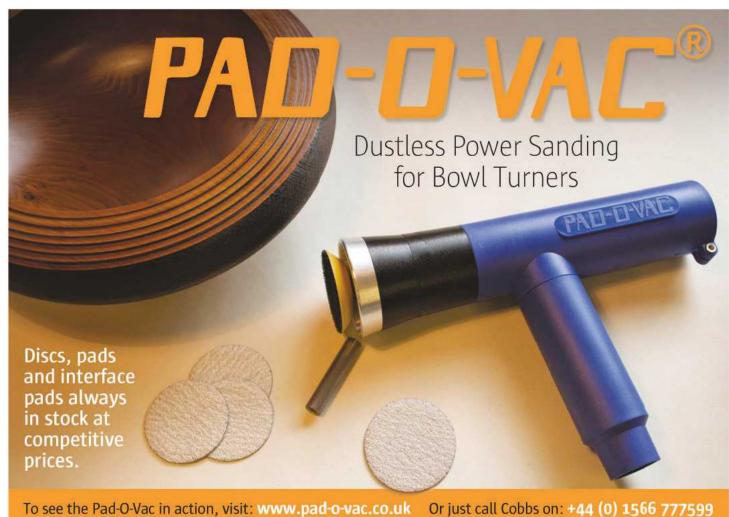
As you go further up the range you will find this extra power and solidity allows you to turn more quickly and confidently. You can take deeper and more ambitious cuts, and the ease of use of features such as electronic variable speed control make turning more intuitive and enjoyable.

Above all, bear in mind that woodturning is an addictive hobby, so try to buy in as much spare capacity as you can afford now to save expensive upgrades later on.

### **NEXT MONTH**

Alan introduces the basic woodturning tool kit, and explains how to separate the wheat from the chaff





£264

Makita

The Makita oil-pulse impact driver is a new breed of power tool that uses a hydraulic rather than a mechanical impact system. This results in a sophisticated tool that is both quiet and controllable in use

Makita 18V impact driver

Impact drivers are the ultimate professional tool for quick and effortless screwdriving and fixing. Whilst ideal for demanding jobs involving larger screws, their speed and extreme torque make them less suitable for more sensitive work. Also the noise generated by the impact mechanism can be tiring. Makita have overcome both of these difficulties with their new oil-pulse driver. Not only is it far quieter than conventional impact drivers; it's also more controllable, with a range of settings allowing it to tackle more delicate work.

### **Design features**

The Makita is a conveniently compact machine with a body length of only 136mm. It has a standard hexagonal chuck and an LED worklight. There is a variable-speed trigger and a sliding forward/reverse switch. The battery slides onto the base of the handle, and any Makita 18V Li-ion battery can be fitted. Just above the battery is a small panel housing the battery charge

indicator and the switch to select one of the four operating modes.

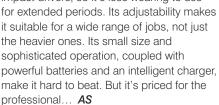
#### Operating modes

The four modes available are: hard impact, medium impact, soft impact and 'T' mode. The first three are selfexplanatory and simply allow the tool performance to be tailored to the type of screw and the hardness of the timber. The fourth position is a rather clever sort of 'Auto' setting that self-adjusts as the screw is driven in. It starts on full power to drive the screw in quickly, but as it meets resistance when the screw is almost home, it slows down and reduces the power of the impacts so the screw can be seated safely without damaging the finish of the screw head or the surrounding workpiece.

### Using the driver

This is a great machine to use, being both gentle and powerful. The oil-pulse system makes it considerably quieter than other

impact drivers, so it's less wearing to use it suitable for a wide range of jobs, not just the heavier ones. Its small size and sophisticated operation, coupled with make it hard to beat. But it's priced for the



### **SPECIFICATION**

**BATTERY** 18V 3.0Ah Li-ion **IMPACT MODES** IMPACT SPEED 0-2200 & 0-2700bpm **DRIVING SHANK** 6.35mm hex **MAXIMUM TORQUE** 40Nm 4-8mm CAPACITIES machine screw 5-8mm standard bolt

WEIGHT 1.5kg with battery

### **VERDICT**

This is a remarkably versatile and powerful tool that's a pleasure to use and highly effective.

**PROS** Sophisticated design

■ Compact size

Quiet operation

■ Excellent performance

**CONS** Professional price

**VALUE FOR MONEY PERFORMANCE** 



### **FURTHER INFORMATION**

■ Makita

**01908 211678** 

www.makitauk.com



The battery level meter is located on the driver's control panel



The battery slides onto the base of the tool. Any Makita 18V Li-ion battery can be used



The extremely bright LED worklight is well positioned under the chuck

The driver is compact and well balanced, and drives screws effortlessly



The Proxxon Micromot 230/E is a truly all-round tool, designed for drilling, milling, grinding, polishing, brushing, cutting and engraving. It offers easy handling and is without equal in its class

### Proxxon Micromot 230/E mill/drill





This is the lightest and slimmest of the Proxxon mains drills, with an overall body length of 230mm and a maximum body diameter of 36mm. Six precision steel collets come with the drill, which will not, repeat *not*, take the Proxxon keyless chuck.

The glass-fibre reinforced polyamide body has a soft finger-grip around the metal nose cone. The top of the nose features a push-down spindle lock which is used to tighten and release the collets.

The motor gives a speed range of 6,500 to 21,000rpm. The variable speed selector is situated on the top of the body, together with the on/off switch.

The drill can be held by means of its 20mm metal collar in various Proxxon accessories such as the upright drill stand. It can also be fitted into the plunge router

### **SPECIFICATION**

 MOTOR
 80W

 NO-LOAD SPEED
 6000-20,000rpm

 COLLETS
 1, 1.5, 2, 2.4, 3 & 3.2mm

 WEIGHT
 270q

### **VERDICT**

This is a well-designed tool that's accurate and easy to use.

**PROS** ■ Slim easy-grip body

Quiet and vibration-free

Useful range of collets

**CONS** Continental plug fitted

■ 15-minute use restriction

VALUE FOR MONEY
PERFORMANCE



### **FURTHER INFORMATION**

■ Brimarc

**03332 406967** 

www.brimarc.com



The push-down spindle lock is used for securing and releasing collets

The drill can be held by its collar in accessories such as a drill stand, plunge router base or flexible drive



(EC)

The variable speed selector is situated on the top of the tool body



The Proxxon IBS/E (top), the Micromot FBS/24E (centre) and the 230/E (bottom)

Is a polishing kit a good idea? If you're unsure which products to buy, then a kit at this price would be a good introduction and will take away the guesswork as everything you need is in the pack

base, and can be used with a Proxxon flexible drive. The strong metal loop at the end of the body enables the drill to be hung above the bench when using the drive.

The product sent for testing had a European two-pin plug fitted. It's high time Proxxon put moulded UK plugs on the products they export to this country. The adapter usually supplied is a clumsy compromise.

### Using the tool

This is a quiet, vibration free drill which is comfortable to use. The ergonomic design is very good, with the slim body particularly suiting smaller hands. The motor is 15-minute rated, which means that after this time the drill should be given a 15-minute rest. This instruction is covered in the accompanying booklet but it is not marked on the drill itself.

The collet sizes cover most of the miniature accessories sold for drills of this size, including the comprehensive Proxxon range. Collets are far less likely to work loose at high speed, and this is a big advantage over a keyless chuck. However, it's important to use the correct collet, with the 3.2mm size being the one you will probably use most. The drill was supplied in simple packaging with the collets, and without an array of accessories which look generous but often never get used!

### Choosing the right model

I've used all the Proxxon mains and 12V drills over a number of years. This new product is ideal for relatively light work, and will be of particular interest to modelmakers and scrollsaw users. Although there are cheaper brands on the market, this drill is well made and should give excellent long-term service if used within its design limitations.

Selecting which drill to choose can be confusing. The drill at the top of the photo (left) is the IBS/E Professional Drill Grinder; I tested this for The Woodworker in 2011 (Summer issue, page 81). This drill only takes collets. It comes in a hard plastic fitted case with 30 accessories and retails at £97.96.

In the centre is the Proxxon Micromot FBS/240E drill which retails at £71.13. This drill comes with a keyless chuck, again in a hard plastic fitted case, this time with 43 accessories. It will take a collet chuck and the same range of collets as an optional extra. This drill has a larger body and is continuously rated with a 100W motor. It's a good, versatile all-rounder. The Micromot 230/E tested here is shown in the foreground. IW

### **PoliCraft** polishing kit

I was recently sent a Policraft polishing kit to try. It was one of a series of five kits (see panel), each designed for a particular material such as wood, metal or plastic. My kit was for alloys, brass and copper, but woodworkers would probably be more interested in the wood kit and pen turners in the plastics one.

The packs contain similar items. For example, there will be two or three 100mm diameter metal-centred polishing mops made in cotton or sisal, two different polishing compounds and a straight-shank arbor with a 10mm bore.

The arbor fits into the hole in the mop. It has a 6.35mm shank so it will fit any drill chuck, and can also be used with a flexible drive shaft. Clear instructions are included.

### Using the kit

It's important that the kit is kept for use with the particular materials specified. The polishing mops and compounds are different for each material, and they quickly become impregnated with the compound as well as getting dirty. For this reason it's a good idea to mark the mops to match the polishing compound so you don't forget which goes with which.

There are a few safety rules to be aware of. Wear eye protection and tight-fitting latex gloves. Hold the work firmly below the centre line, and concentrate on what you're doing because there's always the risk that the polishing mop will grab the work if your attention wanders.

The kit I used gave excellent results on a brass cannon barrel, and I would expect the other kits to give equally good results on the materials they have been designed for. IW



Each kit contains two or three polishing mops and appropriate compounds





The standard 10mm diameter arbor fits through the hole in the mop



The kits give good results, but the mops tend to get dirty very quickly

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### **VERDICT**

Each pack is well priced, with everything you might need included.

**PROS** Arbor fits any chuck

■ Clear instructions

■ Replacement parts available

**CONS** Don't mix your mops!

**VALUE FOR MONEY PERFORMANCE** 



### **FURTHER INFORMATION**

- Brimarc
- **03332 406967**
- www.brimarc.com

We're all familiar with the scenario as a cordless tool slows and stops, and we down tools to find the replacement battery and put the flat one back on charge. Not any more...

Bosch charging system

All that is destined to be a thing of the past. Wireless charging technology is about to become widely available, courtesy of giant German manufacturer and innovator, Robert Bosch.

Since the advent of lithium ion technology, batteries can now be topped up at any point in the charge/discharge cycle – something that wasn't possible with the earliest NiCd (nickel cadmium) and NiMH (nickel metal hydride) types. We can now recharge at any time – and for any length of time – without fear of harming the expensive cells within.

#### **Induction course**

Following thousands of hours of research and a stack of patent applications, Bosch has

found a way of utilising induction technology to improve the battery charging systems which power our tools. Although the principles behind this science are well known, and are similar to those which make electrical transformers and induction cooker hobs work, never before have they been harnessed to recharge an exhausted battery of any size. It's a big first step towards the ultimate cordless tool.

### **Charging choices**

The charging unit is of a similar size to a regular charger, so won't take up valuable bench space. In operation you have two choices: to put a flat battery on charge as usual, or to provide an intermittent charge by placing the tool onto the charger whenever it's not in use. The charger base is slightly recessed to ensure basic alignment, but as long as the battery is in 'the zone', it doesn't matter which way it's aligned. A red LED warning light will tell you if it's too far out of position, or if the battery has gone beyond its optimum working temperature.

### **Built-in docking**

Although the charger is happy enough just sitting on the benchtop, Bosch has included a tough ABS plastic docking frame to house the charger and help attain best alignment. This frame can be fixed to the benchtop; alternatively, you can sink the charger into the benchtop and cover it with clear acrylic sheet to provide a smart-looking flush charging station.



### Flagship vehicle

Bosch have chosen to launch the wireless charging system with one of their most popular drills, the GSB 18VLi combi. This is a top-quality tool, and features all of the most recent advances that have been made in this field.

The controls are exactly as you would expect, with progressive



The charger and battery have distinctive markings; note the circular recess on the charger



If the battery goes too far out of range, the red warning light comes on





This is a tried and tested combi drill... but now with wireless charging technology

trigger action, thumb-operated rotational control (with a helpful arrow), and a rear top-mounted speed switch. The standard torque control ring is firmly present and correct, and is joined by another which determines hammer action or not.

Combi drills are much better in their percussive powers than they used to be, and the Bosch is no exception. Obviously though, they do have their limits, and if you're contemplating that reinforced concrete lintel then you may want to think twice about it and maybe track down an SDS drill instead.

#### Lighting the way

Like nearly every power tool these days, there is a super-bright LED worklight on board. This is a useful work aid, but the positioning of this one means temporary dazzlement when swapping between drill bits. Mind you, it's nothing that a piece of gaffer tape couldn't fix if it continues to be an irritant!

### Summing up

Overall, I found the Bosch drill to be very user-friendly, and it did all that I asked of it. It could be considered a slightly heavy drill – and has the potential to be heavier still if you go for a larger battery alternative – but this is partly due to the all-metal gearings and the top-quality four-pole motor inside.

If you feel the need for a smaller tool, then the 10.8V range will have something for you... but not the wireless charging system just yet. I'm told it will be coming soon, but upgrading an entire range of tools while still keeping backwards compatibility with existing kit (something Bosch are very rightly proud of) is hardly the work of a moment. **MC** 

### **SPECIFICATION**

BATTERY	18V 2	2.0Ah Li-ion
CHUCK	13mm keyless	
SPEED RANGE	0-500 & 0-1700rpm	
MAX TORQUE		67Nm
MAX DRILLING CAPACITY	wood	35mm
	steel	13mm
	masonry	13mm
WEIGHT		1 6ka

### **VERDICT**

This is a well-proven cordless combi drill, now enhanced with state-of-the-art wireless charging.

PROS Great build quality

- Fully compatible with all Bosch 18V batteries
- Easy and constant wireless charging

**CONS** ■ LED work light position

VALUE FOR MONEY
PERFORMANCE



### **FURTHER INFORMATION**

- Bosch
- 01895 838743
- www.bosch-professional.com/gb/en

A bright LED worklight is set into the upper surface of the battery housing





The batteries have a button-operated three-stage charge indicator

The toughened docking frame both contains and protects the charger...



...as well as helping to ensure the battery is in its optimum charging position



If you're looking for a circular saw with the ability to cut a range of very different materials with just a change of blade, this multi-purpose plunge saw from Scheppach could fit the bill

### Scheppach PL305 multi-saw



Here's a saw that will tackle a wide variety of materials, from wood to soft metals, steel, plastics and laminates, even ceramic tiles and stone. Just how does one saw manage this? The answer lies with the blades, for there are four of them, each designed for a specific purpose. The saw is also designed for plunge cutting, and can be operated freehand or with a guide rail which is an optional extra. Changing a blade, for which the tools required are included, is quick and easy.

**Design features** 

The saw is very compact, with a main handle and a smaller front one. The sole doesn't tilt, and the depth of cut might be considered rather limited at 30.5 mm, but there is plenty of power from the

> motor. The soleplate has marks on its edges to show the centre of the cut being made, along with the outer limits of the cut when the blade is fully lowered. There is also an engraving at the front of the soleplate in line with the blade so you can follow a marked pencil line when cutting freehand. A side fence is not provided. The main handle incorporates the on-off switch, with two safety buttons having to be pressed before the saw is activated. There is no riving knife; with its

> > limited depth of cut one isn't really necessary.

£80 (web price)

### Using the saw

I started my trials by sawing timber. First, these cuts were made along the grain, then across. In both cases I

cramped a batten to the wood as a guide for the saw, and having got used to the slightly unusual switching controls on the handle, I found that sawing was easy.

Next I changed the blade for the one with fine teeth, and proceeded to cut some plastic cladding; the blade cut this effortlessly. I also used this blade to cut some mdf and melaminefaced chipboard. Not only was the sawing easy;

there was negligible chipping on the upper surface.

I made yet another blade change, to the one intended for steel. Again sawing was relatively slow (with lots of sparks!), but much quicker than hand cutting with a hacksaw.

### The biggest challenge

It was now time to try the blade designated for cutting granite. As I didn't have any to hand, I tested it on an offcut of marble. Sawing



A clearly marked millimetre scale shows the depth of cut selected



The underside of the soleplate has a groove for use with a guide rail



A vacuum extractor hose can be connected directly to the saw's dust outlet



Cutting a steel bar was effortless, despite the pyrotechnics

this was very much slower than cutting wood. However, the saw produced a smoothly finished cut.

One more material remained to be cut with this blade: a ceramic wall tile. Cutting this was much faster than the marble. I did the sawing from the reverse side, as there might otherwise have been slight damage to the glazed face.

### Taking the plunge

With the standard wood-cutting blade back in the saw, there was one trial left for me to carry out: plunge sawing. This time I selected a piece of 25mm thick mdf, marked out the aperture I wanted and fixed the first guide batten accordingly. The cutting was easier then expected, and the engraved marks on the edge of the soleplate were a useful guide. After making the other three cuts, I quickly trimmed out the uncut corners of the aperture using a hand saw.

### Summing up

My varied tests with this saw made me realise just how versatile it is. It's ideal for the person who likes to be involved with the wide range of materials that might be found around the house. Indeed, it's hard to think of a common material this saw can't tackle.

It also gives the impression that it could well outlive its owner. It is, though, impossible to forecast the life of the blades; two of them can be re-sharpened, two cannot. However, spare blades are readily available.  ${\it GW}$ 

### **SPECIFICATION**

MOTOR	1010W
BLADE DIAMETER	115mm
NO-LOAD SPEED	12,000rpm
MAX DEPTH OF CUT	30.5mm
CLOSE-TO-WALL CUT	19mm
WEIGHT	3kg

**ACCESSORIES** four blades, spanner, wrench

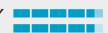
### **VERDICT**

As usual with Scheppach products, the quality and performance is first-class.

- **PROS** Amazing cutting power
  - Easy blade changes
  - Excellent value

**CONS** Unusual switch arrangement

VALUE FOR MONEY
PERFORMANCE



### **FURTHER INFORMATION**

- NMA (Agencies)
- 01484 400488
- www.nmauk.com

Progress was slower when cutting marble, but the cut was clean





Four blades are supplied, for cutting wood, metal, plastics and stone



The saw made light work of cutting mdf, softwoods and hardwoods



It also made a clean cut in a ceramic tile, cramped face down to minimise chipping

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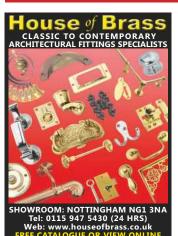
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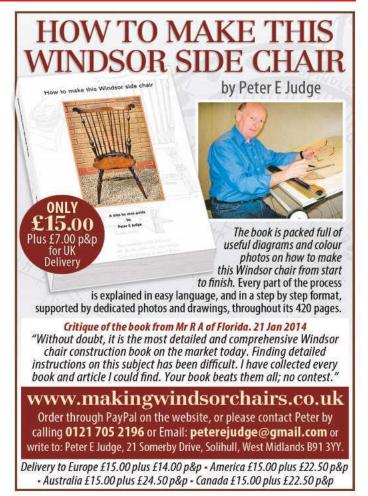


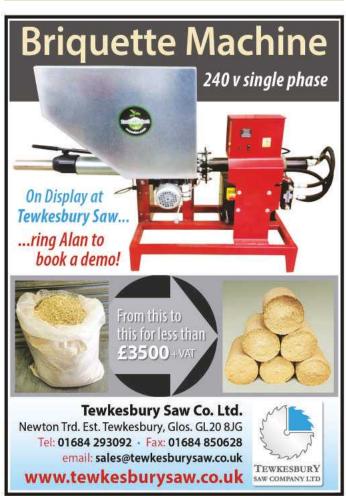


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01189 712472 (West Berkshire)

Stanley Bailey No 4 smoothing plane in excellent condition; £20. 01189 712472 (West Berkshire)

**Black & Decker sander**, 1/3-sheet orbital finishing model, 135W, in good boxed condition with dust extraction kit; £10.

01189 712472 (West Berkshire)

**Administer dovetail/boxcombing jig** plus three cutters, little used, new price £120, will sell for £45.

01536 722721 (Northamptonshire)

Buyer collects.

**Hardwood beams**, 7ft long, 8 x 4in, South American hardwood. Phone for details.

01349 880047 (Ross-shire)

**Record lathe**, model DML 24X, with stand, chuck, tools etc; SIP 6in planer; Silverline mitre saw. £500 the lot. Buyer collects.

01406 350848 (Lincolnshire)

**Vintage wooden bowsaw** with 9in blade, in good condition; £25 plus £5 p&p.

01446 710506 (South Glamorgan)



**Solid oak** genuine former pew and bookshelf, suitable for remanufacturing project; pew is 7ft 6in long, bookshelf 6ft 8in. Offers over £150. Buyer collects.

01458 850102 (Somerset)

Axminster AWVSL lathe, with new motor and speed control unit fitted; £120. Record Power DML24 lathe; £50. 07775 510724 (Essex)

makita

Makita table saw, model MLT100, 1500W motor, with folding floor stand, used only once so in excellent condition; £199. Buyer collects.

01455 843668 (Leicestershire)

**Proxxon angle grinder**, LHW longneck model with case, used once so as new; £80 plus £5 p&p. **07775 510724 (Essex)** 

**Milescraft router 3D pantograph**, new, boxed and unused; £50 plus £7 p&p.

07775 510724 (Essex)

**Walnut boards**, air-dried, seven straight-edged pieces measuring approx 2100 x 380 x 32mm; £75 each or £450 the lot.

07771 663964 (Warwickshire)

Shopsmith Mark V plus bandsaw and planer, little used so in very good condition, can be dismantled for transport; £750. 01536 771455 (Leics/Northants) purpose-built steel bench; £325 ono. 01582 881310 (Herts/Beds)

### **WANTED**

**Woodworker magazines**, pre-1951 plus 1984-1986. Grandfather collecting for cabinetmaker grandson.

01493 368180 (Norfolk)

Spiers / Norris / Henley planes wanted by private collector; any quote beaten. Ring Ron Lowe on 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



- This space is available only to private individuals wishing to buy or sell woodworking machinery and tools.
- $\bullet$  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.
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Please publish this	advertisement in the next available edition of
The Woodworker.	I am a private advertiser and have no trade connections

DI EASE TICK: EOR SALE IN WANTED IN	

My advertisement (max 20 words please) reads as follows:

## In your own write.

Here are just a few of the latest letters we've received since the last issue. Drop us a line on paper or via screen and keyboard to add your voice to the woodworking crowd; you might be one of the lucky few who will manage to get their hands on a coveted Woodworker badge!

You can write to us at *The Woodworker*, MyTime Media Ltd, Enterprise House, Enterprise Way, Edenbridge, Kent, TN8 6HF or send an email to mark.cass@mytimemedia.com





### **BOTHERED BY BATTERIES**

Can you (or anyone else) tell me why the batteries for my cordless tools seem to have become unreliable and often just stop working for no apparent reason? I'm puzzled, and wary of buying more.

Tony Hutchins (carpenter), Kent

You're not alone in your puzzlement, Tony. It's a popular topic amongst tradies I meet with, and something to be taken seriously when you consider the price of them. Most of us will probably be familiar with the slow decline of the older type of battery, but even the newer lithium ion ones seem to just pack up with no warning.

I've experienced it myself, and with more than one brand too, and, contrary to expectations, it's not limited to just the cheap ones either. I suspect that a combination of over-complicated electronics plus sketchy quality controls during cell manufacture may be to blame. All you can do is to look for a good warranty, keep your receipts and ask for replacements when they fail.

If any readers have come across a battery brand that's totally reliable, please let us know.

### WASTING GOOD WOOD

Dear Mark

There seems to be an appalling waste of good usable timber when trees are felled in this country. I know of two old lime trees that the owner had to have felled recently, as the local council called for their demise on safety grounds. Most of the wood was cut into smallish pieces when the use of a chain saw mill or Woodmizer would have produced some good board feet. Luckily I managed to salvage a few smaller pieces for my lathe with the owner's blessing; the rest was destined for the wood burner. What a shame!

#### Mike Pinnington

With timber prices doing everything but go down, I have to agree that it's heartbreaking to see so much good wood going to waste. I think the only thing we as woodworkers can do is to alert a local timber yard whenever we hear of a proposed felling.

Mark

### **NOT BANNED BUT GUARDED**

Hello Mark

The recent article about setting up a table saw says that dado or stacked cutters are banned in the UK. This is simply not true, and advice on correct guarding is available on the HSE website. In fact guarding similar to that shown in the article is what would be expected. However, the actual guard shown may not be acceptable; the maximum gap between the bottom of the transparent guard and the top of the workpiece should be as small as possible, and certainly no greater than 10mm.

It's the same issue if you remove the top or crown guard; you need to add another guard to provide protection for the work being carried out.

This is a general misconception, and even

major names get it wrong. They are legal and usable with the correct precautions. Best wishes

Geoffrey A Laycock [Eur Erg, BSc (Hons), C(FIOSH), FRSPH, C.ErgHF, MIEHF]

I too thought they could be used only on a saw specifically designed for the job. I'm pleased to say that my saw (a Scheppach) takes stacking cutters and I use them on occasion, with of course the correct SUVA-type guarding which I had made up in sheet steel. This bolts onto the aluminium fence and is entirely serviceable.

I generally try to avoid the subject of dado cutters as people still get very worked up about it, but it's great to have the real facts.

### PROTRACTOR TRACKED

Can you please tell me what type of protractor you used in a step-up stool project featured IN the March 2013 issue of *The Woodworker*? It's a yellow plastic device and its size would be ideal for my purposes. Attila Reading, Berkshire



This is something I acquired a few years back. It was some kind of angle finder and came with an arm which I snapped off! You may still be able to get one at http://www.mentool.co. uk/shop/the-true-cut-angle-finder/

Mark

## When the world stopped turning

It's not hard to see the appeal of woodturning. There's something almost magical about watching a shape form gradually from the spinning block in front of you

You get a nice bit of drama too - not to mention the danger and excitement with all the shavings flying about. It's hard then to imagine a time when turning wasn't popular, but that would appear to have been the case in the early 20th century, judging by the title of this article from The Woodworker of September 1934,.

### One manpower

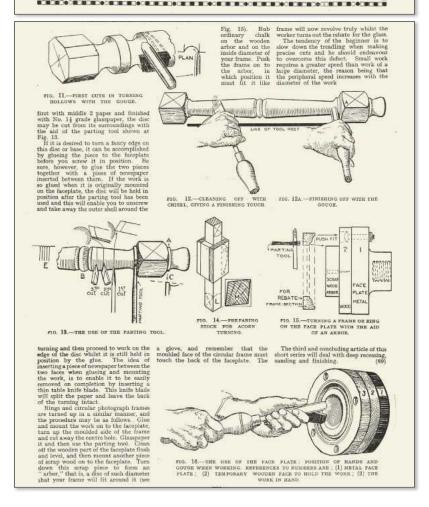
Unlike today's woodworker - whose biggest problems include having to choose a lathe from the vast selection of machines currently available (and then having to pay for it) - the would-be turner in the 1920s and 30s would also have had to be prepared to power the thing himself. The treadle lathe was the prevailing machine back then, and it can be no surprise that the combination of manual dexterity and muscular control required in both powering and shaping a piece didn't rank highly enough to make turning quite the popular craft it is today.

#### Up or down

"But what about the bodgers?" I hear you cry. Certainly these were a not insignificant body of workers at their peak - and please correct me if I'm wrong here - but I would have thought that most of the independent turners making chair components on pole lathes in the woods around High Wycombe and other places had found their way into mechanised workshops by this time.

There were two main types of treadlepowered machine. Both required some enthusiastic leg work, but one lathe was operated standing up, the other sitting down. I can honestly say I don't know which was

THE REVIVAL OF WOOD TURNING



considered the better method (surely it was just a matter of personal preference), but it's clear that today's turners probably have it much easier than their predecessors.

### Now and again

As just an occasional turner myself (a few sets of drawer knobs, small shelf columns and an elegant Regency newel post have been recent jobs on a borrowed lathe), I'm finding it difficult to make a full assessment on the relevance or value to the modern

turner of this near-vintage article reproduced here. I suspect that it's mostly all good basic stuff (after all, you wouldn't expect anything less from our esteemed publication), but even I can see that things have moved on a bit, especially in the field of work-holding devices. Feel free to let me know otherwise at my usual email address, mark.cass@mytimemedia.com

More from The Woodworker archive next month...



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# Introducing the Brand New Range of Woodturning Chucks and Jaws

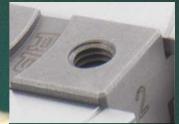
We are extremely proud to introduce the brand new range of Record Power woodturning chucks and jaws. This exclusive new range has been developed using Record Power's extensive experience and knowledge of woodturning in conjunction with a group of highly experienced professional and hobby woodturners, to bring you the ultimate in quality, versatility and value.



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is also fully compatible with Nova and
Robert Sorby brand jaws.



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The improved and enlarged jaw slides
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load bearing ability. They are made
from high tensile steel, reinforced with
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**Full Indexing**The SC4 features a strong backing plate to protect the gear mechanism from dust and 72-point indexing around the full circumference.







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