

# **IN** Profile

**1** ISSUE  
WINTER 97

**The magazine for all Trend Users**

**SPECIAL  
OFFERS**

**LATEST  
PRODUCTS**

**NEWS  
& VIEWS**

## **Spiralling SUCCESS**

Turning on the Trend Routerlathe

## **Routing workshop**

Make your own bench

## **Biscuit jointing**

Modern construction techniques

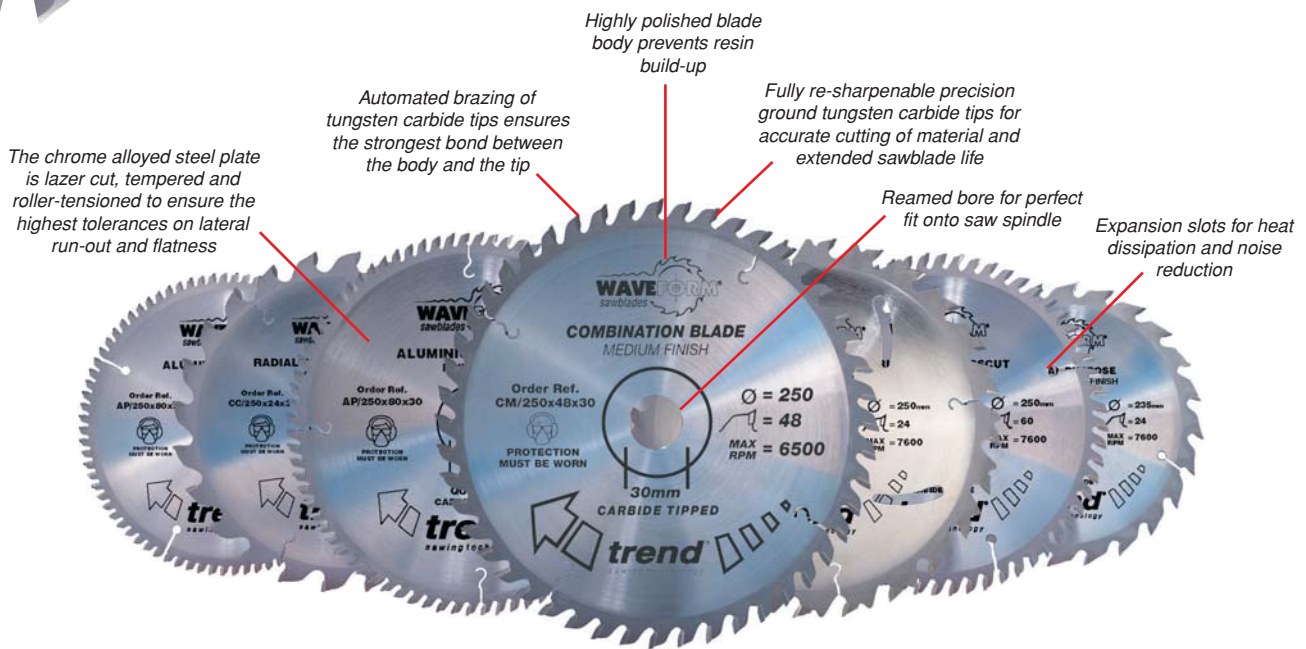
**trend**<sup>®</sup>  
routing technology

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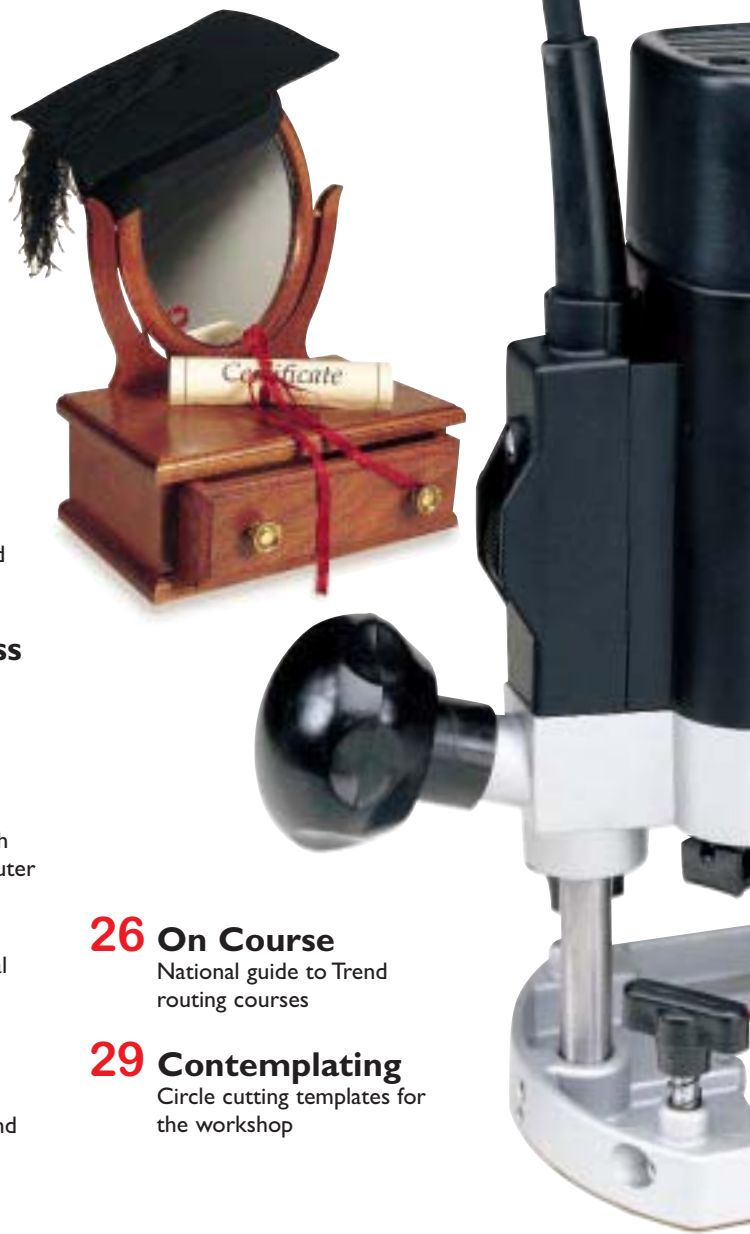
**WAVEFORM**<sup>®</sup> Sawblades are available from your nearest Trend stockist. Full details of the complete range are in our new Catalogue out now.







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Welcome to the first issue of INProfile. Our aim in publishing this magazine is to provide a link between all users of our products, stockists and Trend, not only to announce new products but to help you get the best from the entire Trend range.

Future editions of INProfile will include articles on general aspects of woodworking as well as routing, techniques and technical information. We would also welcome for inclusion comments, tips, news and views from readers, stockists and woodworkers in general.

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**trend**<sup>®</sup>  
routing technology

# know *your router..*

*Driven by a compact high speed motor, the modern electric router is a versatile and adaptable power tool, capable of machining wood, plastics and aluminium.*



**M**odern plunge routers (such as the Trend T5 shown) are designed for safe handling, easy control and reliability. A smooth sprung plunge action ensures that the cutter enters and withdraws cleanly and squarely from the surface of the work, safely retracting the cutter above the baseplate. Cutter installation is

simplified by use of an integral spindle lock, while micro-adjustment of both the depth gauge and side-fence, ensure precision and accuracy when routing. An easily accessible, quick action switch allows for smooth and positive control. Limited only by the experience and inventiveness of the user, with careful selection of the correct cutter to suit a specific application, the plunge

router can be used to produce very accurate work to a fine, quality finish. Being simple and functional in its design, a working knowledge in handling the router is not difficult to attain. A little experience will quickly encourage both amateur and professional crafts people to both intensify and extend the use and scope of routing within their hobby or occupation.

# ..know your cutters

Part of the skill of routing is selecting and using the correct cutter for the job in hand. To produce a quality finish, cutters must be kept in good condition and be regularly honed.

The **Flange or Fillet** is the radiused section between the shank and the cutter body.

**Tungsten carbide tips** are brazed onto a steel body before being ground to specific cutting angles. The correct tip and relief angles are essential to ensure optimum performance.

The **Shank** is machined to a close tolerance to match the internal diameter of the collet.

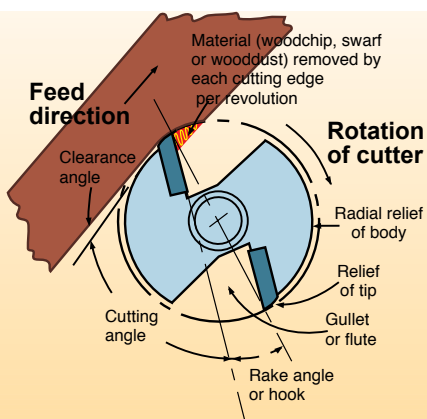
**Flutes** are ground into the cutter body leaving precise clearances and relief angles. These clearances prevent waste material from packing between the cutter and the face of the wood.

**Self-guiding** cutters are ground to take a ball bearing guide. The bearing is used to follow the edge of a template, or the edge of the work itself, for trimming and moulding applications.

## Tungsten Carbide

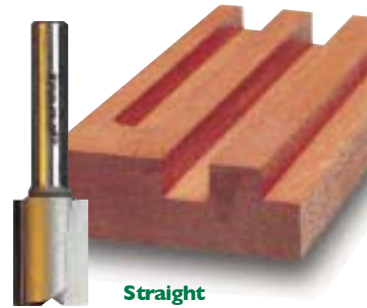
Tungsten carbide tips are used for most general routing applications as they retain their edge far longer than High Speed Steel cutters. They should always be used for cutting and trimming abrasive materials such as MDF, chipboard and other resin bonded materials and can be used equally as well on certain plastics and natural timbers.

## Feed direction

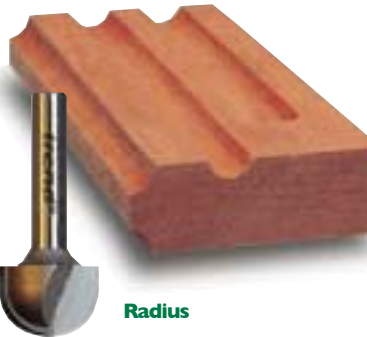


Always feed the router into the work against the rotation of the cutter. This ensures that the cutting action pulls the side fence or guide bearing into the edge of the work or template, preventing it from wandering and so providing far

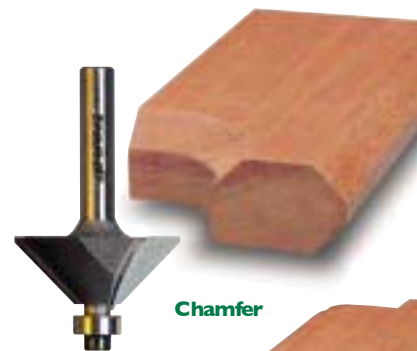
greater control. Feeding the cutter into the work in the opposite direction (with the rotation of the cutter) may cause the router to run away from you, reducing the control you have over it.



Straight



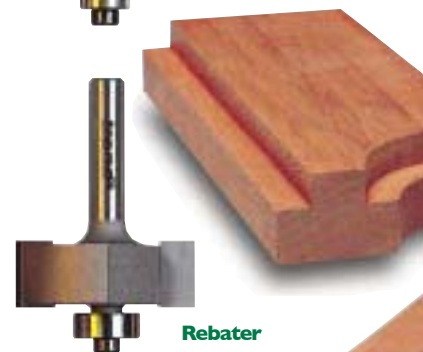
Radius



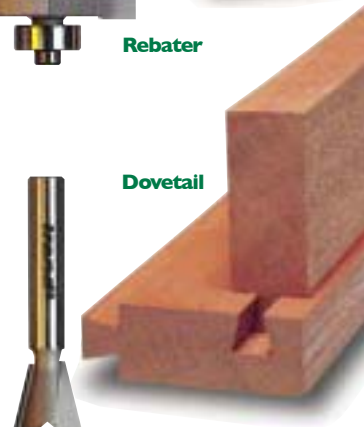
Chamfer



Ovolo



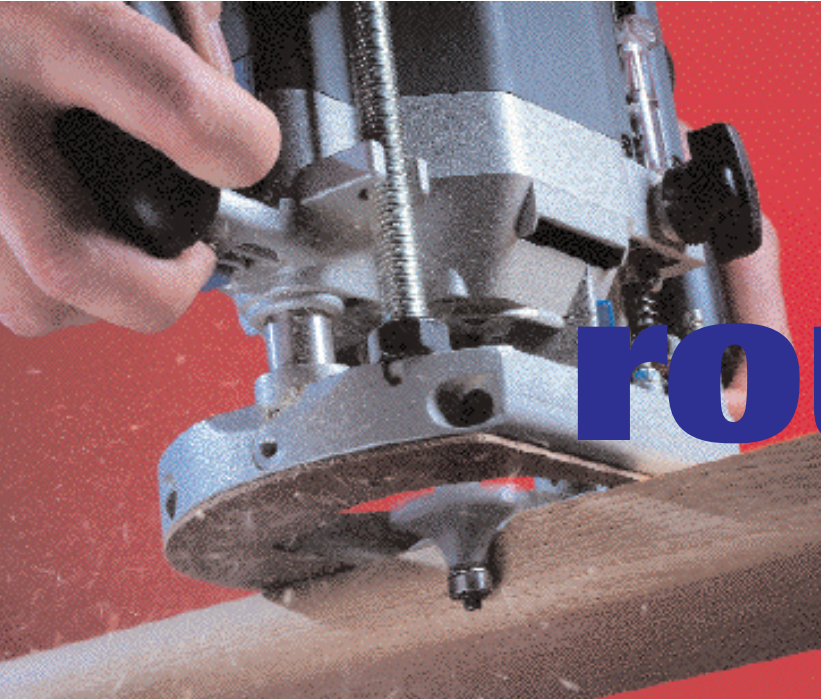
Rebater



Dovetail

A selection of tungsten carbide tipped cutters from Trend's **Craft Range**





# what is routing?

*The electric router is now accepted, by both amateur and professional woodworkers, as an essential tool for the workshop.*

**R**outing encompasses a wide range of skills, not just in handling the router itself, but in using it to its best advantage in conjunction with various guides, jigs and other 'routing devices', as well as the extensive range of router cutters now available. Routing is also about innovation in both the methods and applications to which the router is applied and in the aesthetic and technical design that it is used to create.

## The Router

Most woodworkers turning to routing have some idea and experience of working with power tools. Most householders will have occasionally used a jigsaw or electric drill and will know that power tools come in a range of power ratings and capacities - the more power you have, the faster and harder you can go about the job - well that's the theory anyway!

However, as if you are buying a new car, computer or washing machine, you will still want to know just what to buy to suit you and your pocket.

Accordingly, the questions facing the newcomer to routing are most likely to be:

How much power do I need?, What collet size do I need?, Do I need variable speed?, Do I need to buy

lots of accessories?, Do I need to buy lots of cutters?

## Self Assessment!

How much power? - This depends on the type of work that you intend to use the router for.

If you are cutting dolls house



mouldings or trimming veneers or laminates, there is little point in buying a heavy duty router. It will be too heavy and clumsy for the purpose. Conversely, if you are making doors and window frames, you would not be able to remove enough material efficiently without overloading the motor. This would cause the cutting speed to drop, resulting in a poor finish and possible premature burn-out of the motor and bearings.

## Router Power (746 watts = 1 HP)

**Light Duty Routers**  
400-750 Watts

**Medium Duty**  
750-1200 Watts

**Heavy Duty**  
1200 and above

## Collet Capacity

For many applications the strength of a cutter often depends on the diameter of the cutter shank. The thicker the cutter shank, the more wood you can remove and the deeper you can cut on any one pass, with less risk of the cutter flexing excessively or breaking. Light duty routers are generally supplied with 6.5mm (1/4") collets although some models can be fitted with an optional 8mm collet. The introduction of 8mm shanks has allowed many of the larger diameter cutters to be used in light duty routers, although particular care must be taken when using them and any manufacturers recommendations concerning cutting speed and depth of cut must be closely observed. Most medium and heavy duty routers can be fitted with alternative diameter collets of 6.35mm (1/4"), 9.5mm (3/8"), 12.7mm (1/2") and 8mm diameter, although most are supplied with only 1/4 inch or both 1/4 and 1/2 inch collets. Alternative size collets are available for most makes and models of router. Do remember that small diameter cutter shanks will flex more, with a greater risk of breakage under the increased load from a heavy duty router.



remember that small diameter cutter shanks will flex more, with a greater risk of breakage under the increased load from a heavy duty router.

## Speed & Variable Speed

Router spindle speeds are generally given as no-load speeds, that is the speed that the motor spindle is rotating at before the cutter enters the wood. This is generally between 18,000 and 30,000 RPM depending on the power of the router. Light duty routers will have a higher no-load speed to help compensate for their lower power. Most routing operations using cutters up to 25mm diameter, should be carried out at the maximum router speed to achieve optimum cutting efficiency.



Operations involving the use of cutters over 50mm diameter should be carried out at speeds of between 12,000 and 16,000 rpm.

Variable speed routers with full wave, load compensated electronics, tend to run smoother and possibly quieter than single speed machines, resulting in reduced bearing wear and eliminating the initial jolt on start-up. They also accommodate the use of large diameter cutters at their recommended safe speed. Aluminium and plastics require routing at lower speeds to reduce overheating or melting, preventing problems such as weld-back, whereby molten waste material re-forms within the cut, or the fusion of waste particles to the cutter.

## Which Accessories?

The few guides and accessories supplied with the router allow you to carry out various basic cutting operations such as edge trimming,



moulding, and template work. However, to increase the versatility of your router it is worth considering adding further accessories to your routing workshop.

The range of accessories that can be bought, includes router tables, circle and ellipse cutting jigs and decorative carving, lettering and turning attachments. Proprietary jigs and templates are also available for cutting stair-housings, joining laminated work-tops and cutting dovetail joints.

Alternatively many jigs and templates can be made in the workshop to suit your specific requirements, and jig making accessories, such as levers, knobs, threaded inserts and router mounting plates, are readily available. For the newcomer, the array of routing accessories is often confusing, but one of the first considerations should be an inverted router table to allow the router to be used as a stationary, rather than a hand held machine. A rigid, easily adjustable inverted router table will provide far greater accuracy, ease of use and increased safety for carrying out a wide range of routing operations.

## Which Cutters?

For the beginner, it is certainly not worth buying a large selection of cutters until you know exactly which types you will use most frequently or until you are faced with a specific task. Various size straight cutters are always worth having as they serve many more applications than just cutting grooves and rebates. Used with angle guides and stepped fences, they can be used for cutting mitres, edge planing and trimming. An economic solution for the beginner is buy a basic set of cutters

## FREE Booklets



This 32 page illustrated booklet will take you step by step from setting up your router, to using all the cutters in the Trend Starter set and their correct application.

This '30 Routing Techniques' booklet is packed with practical routing ideas and techniques for tradesmen and home improvers.



## New Books & Videos



Our range of books and videos will help you get the best from your router and lead you on to more innovative and creative woodworking. See page 20 for more information

such as the Trend starter set. Although not all the cutters will be used as frequently as others, this will provide valuable experience of the basic range, and in selecting the most suitable cutters for specific applications in the future. **IP**



## Router Table

To extend the versatility of the router, a router table should be the first consideration.



# new products

A selection of new products now available from your local Trend stockist



## 4 piece Cutter Set

A set of four 1/4" shank cutters aimed at those new to routing is now available.

- 10mm straight flute cutter
- 60° V-groove cutter
- 8mm bearing guided rounding over cutter
- 12.7mm decorative panelling cutter

Ref. SET/SS6x1/4TC £27.95



## DMT Diamond Aligner Kit

Sharpen your kitchen and workshop knives to a perfect edge and to the optimum cutting angle guided by the DMT Aligner. It is available separately or as a kit with a 4" diamond whetstone. The kit is supplied with a fabric storage wallet.

Refs.  
**ABG Aligner only** £8.46  
**AKF Aligner kit with 1 stone (fine)** £31.50

## Reduction Sleeves

Two further sizes of reduction sleeve have been added to the Trend range, allowing smaller 8mm and 6.3mm diameter shank cutters to be used in 12.7mm and 8mm collets.

Refs.  
**SLV/0812** £10.55  
**SLV/1408** £7.95



## Collets

Two new 8mm collets are available to fit the light duty Hitachi routers. One is designed to fit the older FM8\* and later ZK2008\* routers, the other is for use in the Hitachi M8(V)\*\* router.

Refs.  
**997526\*** £8.95  
**302193\*\*** £35.50

## Mini Collet

A new 3mm collet is available which fits the Elu MOF96(E) and DeWalt DW613, allowing 3mm shank miniature cutters to be used in these routers.

Ref. 53351030 £27.14



## DMT Double-sided Diafold Whetstones

A DMT 4" double-sided diafold handle whetstone with two grit combinations offers dual purpose honing of cutting tools. Available in extra-fine/fine\*, fine/coarse\*\* and coarse/extra-coarse\*\*\* grit combinations.

Refs.  
**FWEF\*** £39.95  
**FWFC\*\*** £39.95  
**FWCX\*\*\*** £39.95

## Biscuit Jointer Blade

This new six wing TCT blade is for use with all standard biscuit jointing machines, having a blade diameter of 100mm and bore size of 22mm. The new anti-kickback design provides better cutting control, while the flat scribe tooth form produces a quality finish.

Ref. BJB/100S £34.95







### 4-piece 3D-Bit Set ▲

Twice as fast at cutting as a normal bit and capable of drilling at an angle, four sizes of the popular 3D-Bits are now available as a boxed set. The set contains bits of 15mm, 18mm, 20mm and 22mm diameter and is supplied complete with instructions in a strong plastic case.

Ref. **3D/KIT/2** **£59.99**



### DMT Mini Jig

A DMT mini jig is available for sharpening craft knife blades. For use with either 8" fine or extra fine whetstones.

Ref. **MKF** **£10.40**

### Releasable Cable Ties

Suitable for a multitude of uses, releasable cable ties offer a quick and easy method of securing power leads for storage or to keep them safely away from the working area. Moulded with a release tab and ratchet, these black nylon ties are 250mm long by 7.5mm wide. Will tie a bundle diameter up to 68mm.



Refs.  
**CTR/250/10 Pack of 10 £1.95**  
**CTR/250/25 Pack of 25 £3.95**  
**CTR/250/50 Pack of 50 £6.95**

### Boxed Biscuits

Biscuit dowels are now available in assorted sizes, packed in a convenient refillable packet. The pack contains thirty of each of the two smaller size biscuits No's 0 and 10 and forty of the larger size No 20.

Ref. **BSC/MIX/100**  
**£4.05**



### Snappy Set ▲

The revolutionary Snappy Quick Chuck is now available in a 19 piece boxed set containing 7 sizes of drill adaptors complete with drills, 5 sizes of countersinks complete with drills, 3 sizes of centring guides and 3 sizes of Pozidriv® screwdriver bits. The kit is supplied in a strong plastic carrying case that is also available separately\*.

Refs.  
**SNAP/KIT/1 £64.95**  
**CASE /SNAP/1\* £5.95**

### Snappy Screwdriver Bits

Phillips® and Pozidriv® bits for the Snappy Quick Chuck are available in sizes 1, 2 and 3 in packs containing three of the same size or mixed.

Refs.  
**SNAP/PH/1 or SNAP/PZ/1 £4.50**  
**SNAP/PH/2 or SNAP/PZ/2 £5.50**  
**SNAP/PH/3 or SNAP/PZ/3 £7.00**  
**SNAP/PH/123 or SNAP/PZ/123 £5.25**



# spiralling

## SUCCESS

turning on the Trend Routerlathe

*The ease and creativity afforded by the Trend Routerlathe in turning tapered, fluted and barley twist work has appeal for both amateur and professional woodworkers.*



**T**he Routerlathe's appeal for amateur woodworkers lies in its ability to produce turned, tapered, fluted and barley twist work, quickly and effortlessly, while requiring only a basic knowledge of turning techniques. For the professional, the Routerlathe offers an economic, time saving method of producing occasional work, either in batches or as one-off components.

### Centre to Centre

As with a conventional lathe, the workpiece is held between two centres. The maximum timber length that can be used is 930mm and the maximum spiral length that can be cut is 630mm. The minimum square section that can be used is 26mm and the maximum 79mm. Fitted to a sliding carriage, the router is hand fed along the workpiece for parallel, tapered or fluted work, or cable fed for spiral, roping or barley twist operations.

### Tailstock

Mounted on a pivoted plate, the threaded tailstock centre allows the workpiece to be tightened between centres and facilitates the cutting of tapered work.



### Router Carriage

The sliding router carriage is slotted to accommodate the most popular routers. The depth of cut is set using the router's own depth gauge and turret stop and adjusting the levelling feet fitted to the sliding carriage.



### Cable Drive

The carriage is cable driven allowing both right and left hand spirals to be cut. By disengaging the dividing head pin the headstock can be rotated freely for cutting radial beads.

### Headstock

A square cup is fitted to the standard headstock to accept square section material. An alternative four prong centre is available for use with timber that has been previously turned 'round' on a conventional lathe or planed to a hexagonal section. The headstock is rotated by a cranked handle and incorporates a 24 position dividing head, for accurately spacing flutes and spirals around the workpiece.

### Tailstock

A continuously threaded rod and wing nut allows the workpiece to be secure between centres.

### Headstock

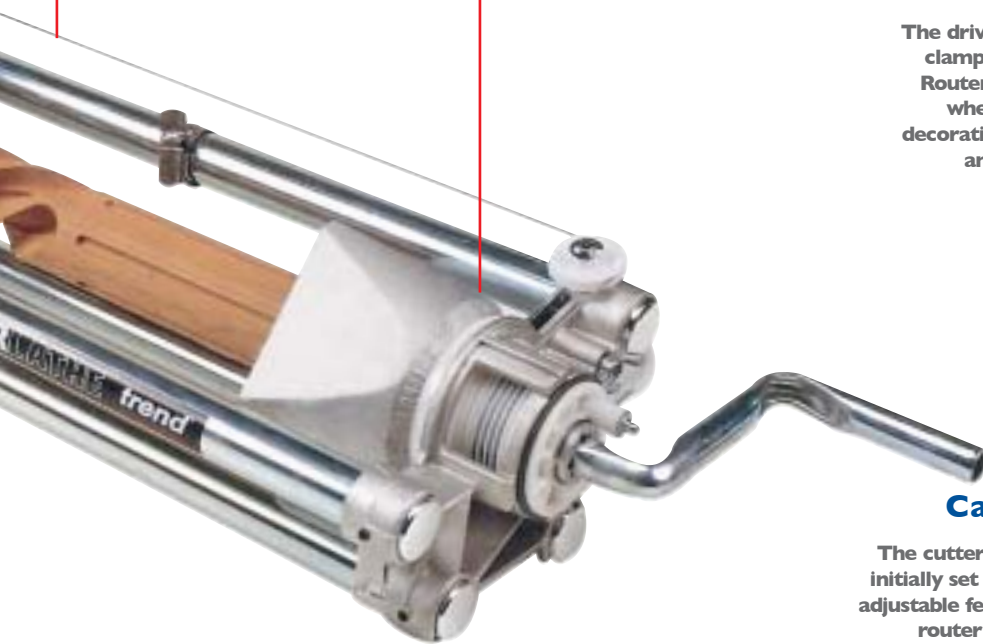
An alternative pronged Headstock centre is used when fitting pre-turned work.

### Cable Drive

The drive cable is clamped to the Router carriage when cutting decorative spirals and roping.

### Carriage

The cutter height is initially set using the adjustable feet on the router carriage.







### ◀ Centring

Prior to fitting the timber, pre-drill location holes for the headstock and tailstock



### ◀ Tapering

The pivoted plate is used when cutting tapered spindles or flutes



### ◀ Radial Cuts

Beads and coves can be plunge cut with the router



### ◀ Template Work

Templates can be used for copy or contour routing

## Using the Trend Routerlathe

The Trend Routerlathe is supplied ready assembled, requiring only to be fastened to a baseboard or bench top and for the router to be mounted on its sliding carriage.

### Fitting the router

The router is centred over the carriage cutter aperture preferably using the threaded locating points on the router base. It is important to ensure that the router's power lead is led clear of the lathe and it is advisable to use a dust extractor.

### Preparing the timber

Only close and straight grained timber should be used. Avoid woolly grained material and timber that is cracked, split or contains loose knots.

### Turning or rounding the workpiece

To 'round' a workpiece, the index pin is withdrawn and the cable disconnected from the carriage. Stops are positioned to limit the carriage travel to the length of the section to be turned. Using the router's depth gauge and turret stop, the depth of cut is set to allow the work to be cut in steps of no more than 2mm. Starting from the tailstock end, the router is switched on and allowed to reach full speed. With practice, feeding the cutter into and along the timber will become a smooth continuous movement using one hand to control the router and the other to turn the crank. Having



roughly rounded it along its length, The height of the workpiece is adjusted using the pivoted plate, to produce a taper offset of up to 12mm.

### Radial beads and coves

Decorative beads and coves are cut using one or a combination of cutter profiles.

Short dowels for joining sections to turned lengths are also cut in this way, using a straight cutter. After setting out each bead or cove on the rounded workpiece, the carriage stops are positioned to retain the router in each appropriate position for cutting.

### Spiralling and fluting

Single or multiple start spirals are cut using the indexing head. For multiple spirals, divide the 24 index points by the number of spirals (i.e. 2,3,4,6,8,12 or 24). Starting from 1, count off the points to the next start position (i.e.  $24 \div 6 = 4$ . Start at  $1 + 4 = 5$ ,  $5 + 4 = 9$  etc. (1,5,9,13,17,21). To ensure that the correct sequence is followed, note each pin position as it is used.

### Cutting through spirals

Through spirals are cut using a long reach cutter to remove the waste from the core of the workpiece leaving a hollow centre. However care must be taken as the short grain left when cutting through spirals, leaves the finished work fairly fragile.

### Flutes and beads

By using the dividing head, equally spaced flutes and beads can be cut lengthwise along parallel or tapered work, V-groove, panel mould, radiused or straight cutters can be used for this purpose. Prepare the timber either round or flat sided, and mount it between centres. Set the carriage stops to define the length of the flute or bead. Flutes and beads on tapered workpieces can be cut either parallel to the surface, or run out ( i.e. to become shallower ), towards the narrow end of the leg or spindle. To do this the flute angle needs to be

altered from the taper angle by adjusting the tailstock centre height.

## Templates

For copy or contour routing, the cutting depth is controlled by a follower running on the edge of a template fitted to the front of the Routerlathe.

The design should be first drawn out on squared paper, setting out the curve or taper of the component and the position of any radial bead or cove. As the profile relates to the cutter shape, it is often only necessary to provide a notch in the template edge to locate the follower. As the cutter is positioned half way between the router carriage pivot point and the follower, the vertical depths need to be doubled. For complex designs, it may be easiest to cut two or more simple templates rather than one complicated one. **IP**

High speed steel cutters from the seven piece set are ideal for making clean cuts in soft woods.

## Routerlathe cutters

Most plunge cutting router cutters can be used with the Routerlathe, including straight, coves and decorative moulding cutters. Only straight cutters with suitable bottom cut characteristics should be used. Two sets of cutters are available from Trend, especially selected for use with the Routerlathe. These consist of seven Tungsten Carbide Tipped (TCT) cutters, or seven similar profile High Speed Steel (HSS) cutters. Both sets are available with either 1/4" or 8mm diameter shanks.

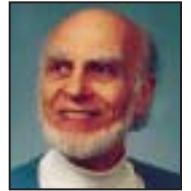
### Cutter set references

- SET/RLxTC 1/4" shank
- SET/RLxTC 8mm shank
- SET/RLxHSS 1/4" shank
- SET/RLxHSS 8mm shank



# routing

## into the millennium



by Jim Phillips

A keen woodworker, Jim's enthusiasm for the Router led him to form Trend in 1955.

**Almost every conceivable profile can be cut with a modern hand router. But how did the router develop to what it is today?**

### 1930's-40's

The spindle moulder was well established as a heavy duty machine for the joinery shop, but already people were realising that for light work, it was like using a hammer to crack a nut. Hence 'wood engineers' across the developed world started to think in terms of a hand held moulder with an adjustable base that would allow you to set both the depth and width of cut. But it took a group of engineering firms in South West Germany, whose forebears were Swiss immigrants, skilled in clock making, to develop the 'plunge' router, featuring retractable spring-loaded columns and a range of guides and jigs to give versatility to routing operations.

### 1950's

It was at this time, Trend came on the scene to bring routing technology to new heights of achievement. When news reached us about the plunge routers produced in Germany and in particular those of Eugen Lutz KG (Elu), we secured the agency for their tools in the UK.

Although Elu routers were years ahead of their rivals, Trend came up with further developments following feedback from UK end users. Trend carried out in-depth research within the UK woodworking trades with a view to upgrading design features to meet recommendations. In consequence, the performance of Elu routers against other competitors reflected in buoyant UK sales and domination of the market. As router designs improved it became clear that the range of router cutters needed extending to perform most of the jobs formerly done on a spindle moulder. Trend set about designing and introducing a more extensive range. The first shank-mounted bearing, self guiding cutters were to my knowledge, a product of my micro-workshop. From a range of approximately 50 router cutters in 1958, Trend now offer tooling with 2000 variations in sizes and profiles.

### 1960's-70's

We had now forged close links with the Elu factory and in 1972 became a subsidiary of Eugen Lutz as 'Trend Elu'. Routers were now being made with more powerful motors inside

compact and resilient plastic bodies. Innovative depth gauges and turret stops were introduced. Accessories included special jigs and devices to give further scope to routing applications. Having been recognised for our authoritative knowledge of routing techniques, we were now invited to design a small dovetail jig to be marketed world-wide. This was a highly successful product, and to this day many thousands are produced by Black and Decker Ltd in the UK for worldwide distribution. Trend were also the pioneers of dust extraction systems for routers, and designed extraction ports for the complete Elu range. At this time Trend also introduced variable speed control units for use with routers anticipating the need for machines to run at slower speeds of 12000/16000 RPM when using cutters above 50mm in diameter.

### 1980's and 90's

The popularity of the router across the whole spectrum of the woodworking trades, was now well established, but in the UK there was no hand-book on the subject. The Trend team unearthed all the experience they had accumulated



over the years and brought into being 'Techniques of Routing'. First published in 1981, fifty thousand copies were sold during the following five years. Updated copies still enjoy good sales, in spite of the many other books on the subject now on offer.



◀ **Over 50,000 copies have been sold since the first edition.**

### Into the future

There is no stopping the advance of this fascinating tool that is truly a 'Workshop in itself'.

But just where is routing going in the years ahead?

Obviously, today's trends point to even more versatile routers in the near future, with an unlimited range of cutters to 'mould and shape' industry. Maybe, early in the next millennium, you will see even further advancements, such as 'virtual reality' controlled routers! Series wound motors will be replaced by continuously rated brushless ones. Routers will become quieter and more user friendly, not even a collet spanner to mislay.

Finally, I predict new technology will not demise the router for we will increasingly need 'living' materials around us. Natural wood will always hold its own in a 'plastic' world and the router will continue to provide the means of producing warm and friendly shapes in wood. **IP**



by Miles Davey

Having trained as a carpenter, Miles turned his attention to cabinet making before joining the Trend Technical department in 1995.

# on-site

## techniques for the trade

### Recessing Hinges

All doors need to be recessed to take hinges and this is a job that can be easily and quickly carried out using a light duty router. For this I prefer to use the router fitted with a guide bush to follow a simple template. When fitting hinges around 100mm long, use a 10mm (3/8 inch) diameter router cutter and 20mm diameter guide bush. This leaves an adequate guide bush margin allowing waste to clear easily through the base-plate aperture of the router. (Trend ref 3/08 x1/4 and GB20).



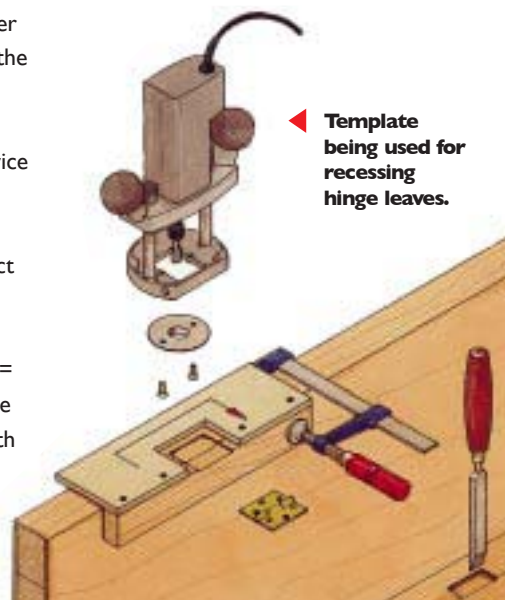
1. The hinge template is cut from medium density fibreboard (MDF) of 6.3 mm to 12.7 mm thickness and screwed to a clamping batten for securing to the edge of the door.
2. Measure off the length and width of the hinge leaf and set this out, either side of a centre line drawn across the template. Allow for the difference between the cutter and guide bush diameters by adding this margin twice to the leaf length and once to the width.

To calculate the margin (M) subtract the cutter diameter (d) from the outside diameter of the guide bush (D) and divide by two (i.e.  $20 - 10 = 10 \div 2 = 5\text{mm}$ ). Therefore the hinge leaf length will be +10mm and width + 5mm). Take your time in setting out and cutting the template, as this will be reflected in the final finish and fit. As most hinges are



of standard sizes, keep the template safe for use on future occasions.

3. Set out the centre line of the hinge position on the door edge, align it with the centre line of the template and clamp the jig to the door. Use the routers depth gauge to set the depth of cut (i.e. the thickness of the hinge leaf), by standing the router on a flat board and plunging the cutter to touch the surface.
4. Adjust the depth stop by inserting the hinge leaf between one of the turret stop screws and the depth gauge rod.
5. Rout the hinge recess by first cutting in at each end, before removing the remaining, waste, feeding the router against the rotation of the cutter. Finally square the corners of the recess with a sharp chisel. **IP**





# biscuit jointing



by Geoff Wood

**Geoff Woods is a furniture designer on domestic and systems office furniture. Whilst at Conran Associates he worked on DIY books for Mitchell Beazley.**

*Biscuit Jointing offers an efficient and time-saving alternative to traditional jointing methods for both solid timber or timber-based sheet material.*



Similar in principle to loose tongue and groove joints, biscuit jointing uses 'biscuits' or flat dowels, (also referred to as 'joining plates') in place of a traditional continuous tongue. The biscuits are located in matching semi-circular recesses cut in the meeting faces of the joint, using a dedicated 'biscuit jointer'.

Biscuit jointing produces a joint stronger and more accurate than conventional doweled joints, leaving a flush and precise assembled joint line. By locating in short stopped recesses rather than a continuous groove, biscuit jointing eliminates any risk of joint failure due to the weakness of the groove edge, or of the edges

curling. To cut the recesses, the jointer is fitted with a 100mm diameter blade to match the edge radius of the biscuits. Fitted with horizontal and vertical fences, inscribed with registration and centre marks, quick, easy and accurate alignment is possible for cutting the corresponding recesses in the joint faces. A graduated depth stop is fitted to determine the depth of the recess in relation to the standard biscuit sizes. Alternatively, where a dedicated biscuit jointer is neither viable or economical, biscuit jointing can be successfully carried out using the router fitted with a bearing guided

grooving cutter (recommended grooving cutter 40mm diameter x 4mm kerf, (Trend ref. SL/GG). While the router's depth gauge is used to position the recesses across the joint faces, the depth of cut is determined by the guide bearing diameter, different diameter bearings being substituted to suit each of the standard biscuit sizes. Using the smaller diameter cutter (as opposed to the 100mm jointer blade), it is necessary to feed the router along the joint face, leaving a recess or pocket slightly longer than the biscuit length. This allows some lateral adjustment for easy alignment and cramping during assembly. Biscuit jointing operations can also be carried out on inverted or overhead



table routers, using the table fence and/or cutter guide bearing to determine the depth of cut and setting the cutter height above the table to centre the recesses across the joint faces.

## Biscuits

Laminated and compressed, preferably from beech, the elliptical biscuits are cut with the grain running diagonally to achieve maximum strength when the joint is assembled. Biscuit reinforced joints should be assembled using a water based adhesive (PVA,

Cascamite etc.) as the water absorption of the timber causes the biscuits to expand and tighten in the recesses.

When dry the biscuits retain their increased size, producing a strong rigid joint.

Both faces of the biscuits are embossed to expose the maximum surface area and both edges are lightly bevelled to allow easy

insertion. Purpose made glue dispensers are available to ensure that the adhesive is applied in the correct quantity to produce a sound and secure joint when dry. Biscuits must be kept in a dry place ideally in a closed container to keep out moisture and to keep them clean and dust free.

## Timber thickness

The three sizes of biscuit available from Trend are suitable for material thickness between 8 and 25mm: No. 0 for 8-12mm thick, No.10 for 13-18mm and No.20 for 19-25 mm. However, for thickness over 20mm two or more biscuits used in tandem should be considered. When marking out it is recommended that biscuits should be set out at between 150mm and 250mm centres and no less than 50mm in from the ends of the

workpiece. Where possible biscuits should be centred across the joint faces or spaced equally across them. For thicker timbers, larger biscuits are available from specialist sources, as are thinner biscuits of 3mm thickness.

## Preparation and setting up the router

It is essential that all faces are cut and finished true and square before the recesses are set out. Always mark the face sides and edges for easy reference prior to setting out the recesses on each face, cutting from each pair of marked faces or edges, to ensure that the surfaces are flush when assembled. This reduces the amount of finishing required and avoids problems when joining veneered or laminated surfaces.

When gluing solid timber, alternate the direction of the growth rings to minimise cupping across the glued-up board and the amount of final finishing required.

Select the appropriate diameter bearing for the required biscuit size and assemble the cutter set on the arbor. Use the spacers to position the cutter so that it will be approximately centred across the material thickness, allowing final adjustments to be made with the routers depth gauge or fine height adjuster.

Always fit the slotter close to the shank to limit flexing along the threaded arbor and do check that the grooving cutter is fitted the correct way round. Fit the bearing beneath or above the cutter, using the stepped washer, and lock nut. Do not hold the arbor in a vice or with pliers as this will damage the shank or thread. With the plug removed from the mains, secure the arbor in the router collet by at least three quarters of its shank length. Check that the cutter will pass through the aperture in the router base, otherwise it may be necessary to raise the base before fitting the cutter. In this situation, take care not to release the depth lock, allowing the cutter to retract

and hit the base plate, even if the cutter is stationary.

## Setting out rod

To minimise setting and marking out, cut a batten 100mm longer than the joint faces and mark off its length along the batten leaving an equal distance at each end. Set out the centre point of each biscuit recess along the length, squaring them across the joint faces for easy reference and making an identification mark at one end of the batten. Use the marking batten to set out the recess centres on each pair of joint faces, always setting out from the same end on each piece to ensure accurate alignment on assembly.

## Other fittings

Fittings for specialised applications are also available, such as the Simplex knock down fittings used for de-mountable screens, and panels. These consist of two aluminium interlocking plates, that locate in the standard biscuit recesses. Other fittings include barbed plastic biscuits and translucent biscuits for joining materials such as Corian®, Varicor® and Avonite®. Hinges are also available for fitting in biscuit recesses cut with a dedicated biscuit joiner.

## For further information contact:

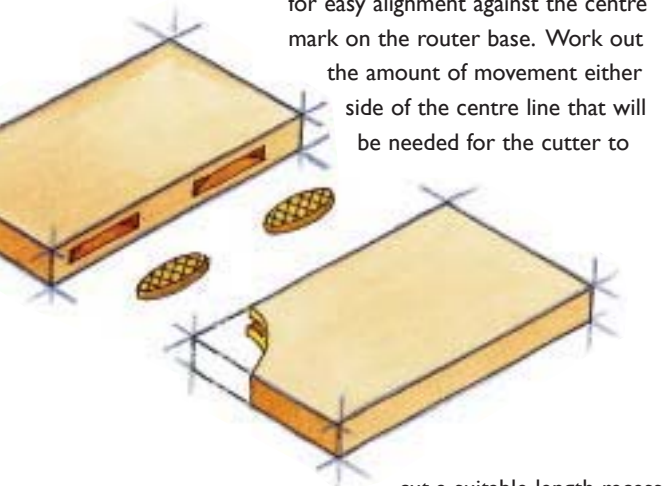
JKO Limited  
Hughenden Avenue  
High Wycombe  
Bucks HP13 5SQ  
Tel: 01494 521051-3  
Fax: 01494 461176





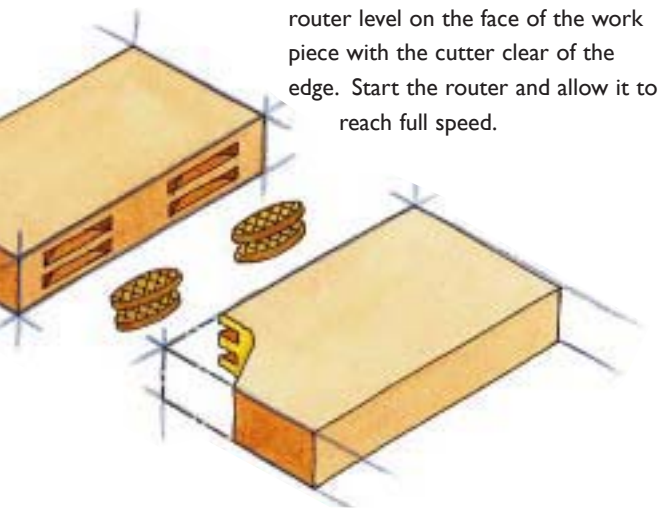
## Edge to Edge Biscuit Joints

1. Set out the centre line of each biscuit along the joint face and square them across to the edge of the wood for easy alignment against the centre mark on the router base. Work out the amount of movement either side of the centre line that will be needed for the cutter to



cut a suitable length recess for the size of biscuit being used.

2. Mark off the corresponding length on the router base either side of the centre line (stick a piece of masking tape on the base plate for this purpose). With the router base on the face of the work adjust the cutter depth to centre the grooving cutter across the thickness of the material.
3. To cut the recesses, position the router level on the face of the work piece with the cutter clear of the edge. Start the router and allow it to reach full speed.

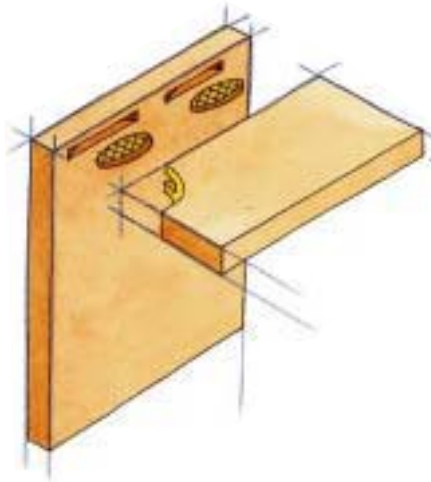


4. Feed the router into the material at the beginning of the slot (aligning the marks on the tape against the centre line on the work) until the bearing touches the edge. Follow through against the direction of rotation of the cutter, to cut the required recess length.
5. Withdraw the router in the same continuous movement.

6. Move along to the next position and repeat the operation.
7. Repeat the whole procedure along each joint face checking that the centre lines align on each pair of mating faces. This process can also be carried out on either an overhead or inverted router table. Again lower or raise the cutter height to centre it across the joint face. Mark the length of the cut on a temporary label stuck to the table fence and align them with the recess centre lines on the edge of the work. For safety, use a hold-down guard to keep the work flat to the table and to guard the cutter when the work is removed.

## Corner Butt Joint

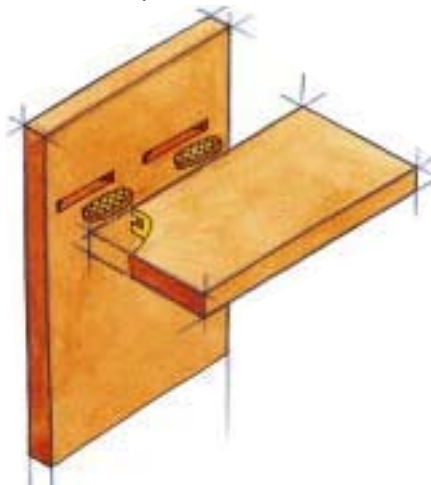
A 90° butt joint can be cut in a similar manner to the edge to edge joint, although the recesses will be cut



on the face of one of the boards. This can be done using the same setting out and fence arrangements but with the baseplate resting on the edge of the board.

## T-Butt Joint

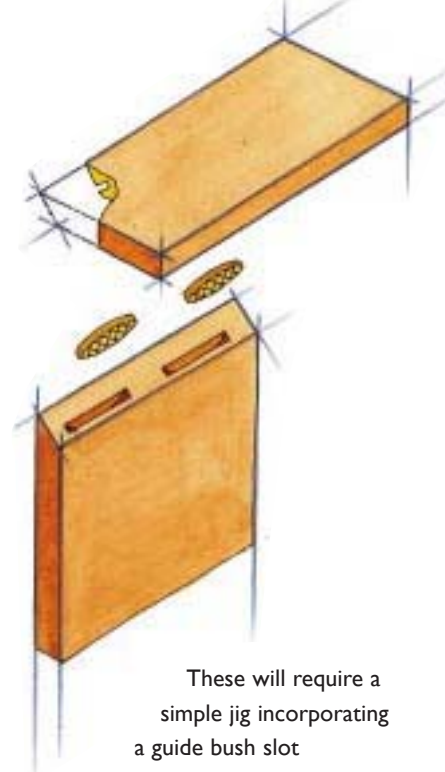
To form T- Butt joints using biscuits, it is necessary to cut recesses across



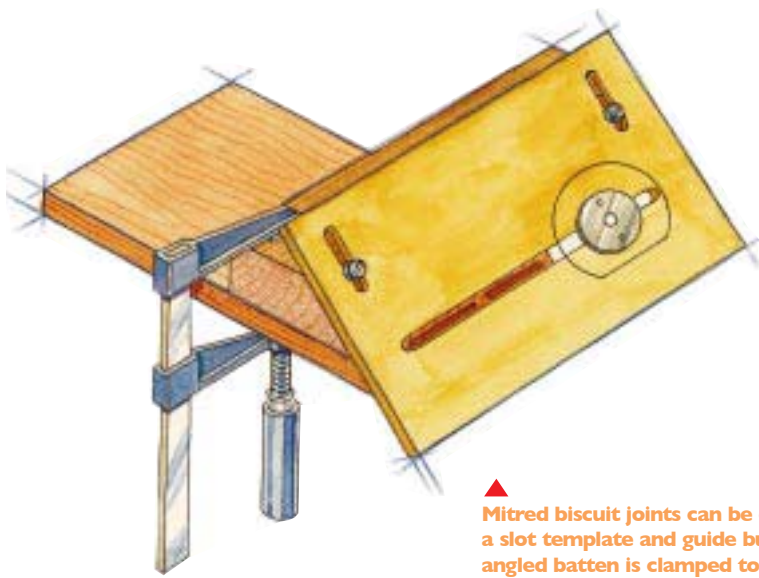
the face of one board, the mating recesses being cut on the edge or end of the second board as before. Face recesses can only be cut (when using the router) with a 4mm diameter straight cutter (Trend ref. 3/01 or C002). To guide the router, clamp a straight edge parallel to the joint centre line, leaving a margin equal to the distance between the outer edge of the router baseplate to the centre of the cutter. This will position the recesses on the centre line. Measure off or use the setting out rod to mark the position of each recess. Set the router's turret stop to allow the recesses to be cut to their full depth (half the biscuit width) in three equal steps.

## Mitred joints

Mitred edges can be biscuit jointed using the router, fitted with a 4 mm straight cutter.

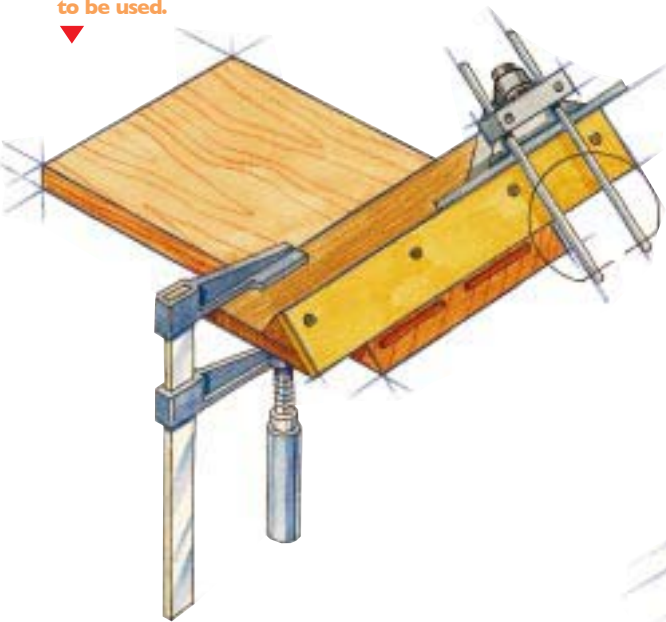


These will require a simple jig incorporating a guide bush slot template, to allow the full length of the biscuit recess to be cut. Alternatively a mitred batten can be clamped to the top edge of the mitred workpiece with the router being positioned over the joint face by adjusting the side fence. **IP**



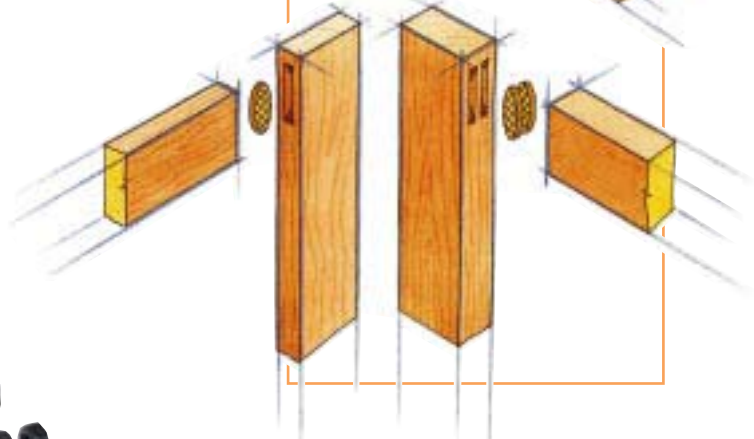
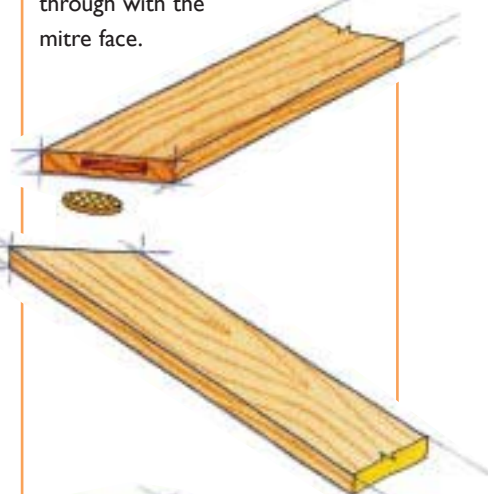
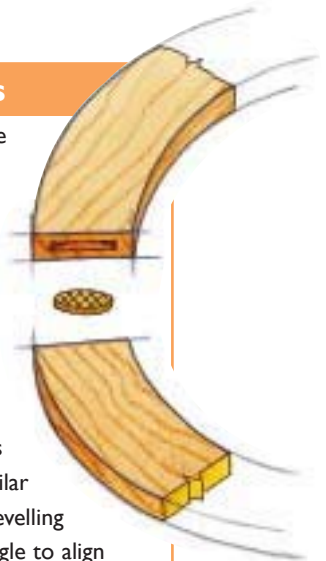
▲ Mitred biscuit joints can be cut using a slot template and guide bush. An angled batten is clamped to the workpiece and the template is slotted to take the two fixing and adjusting screws.

Alternatively, an angled batten can be clamped parallel to the mitred edge, allowing the router's side fence to be used.



## Frame joints

Frame joints can be biscuit jointed in a similar fashion as edge to edge joints, by clamping levelling blocks either side of the frame member to balance the router. Mitred frame joints can be cut in a similar way, but with the levelling blocks cut at an angle to align through with the mitre face.



## Biscuit jointer sets

Trend refs. 342x1/4", 342x8mm or 342x1/2", are supplied complete with a 40x4mm kerf grooving cutter, mounting arbor, spacers, bearing step washer and three bearing guides to accommodate each of the three standard biscuit sizes.





new

# books & videos



### Advanced Routing £16.95

Although titled 'Advanced Routing', this book by Nick Engler, contains information of use to amateur woodworkers, as well as professionals. Includes two furniture projects as well as plans, instructions and details of how to make a router workbench.

### Router Magic £21.95

Bill Hylton offers a collection of 'tricks of the trade' in the form of portable and fixed jigs, tables and guides to maximise the versatility of the router. He also devotes one chapter to vacuum clamping, showing how to make clamping plates and vacuum templates.

### Woodworking with the Router £21.95

A comprehensive and informative guide to routing, by Bill Hylton and Fred Mallet, covering both basic and advanced routing. The book includes virtually all aspects of routing starting with technical information on cutters, machines, etc, through to inlay and template work.



### Joining Kitchen Worktops

£2.95 inc. VAT

An instructional video featuring the Trend Combi range of postform worktop jigs. It shows how they can be used to produce flush precision joints, fitting worktop connectors and shaping the corners of peninsular kitchen units.



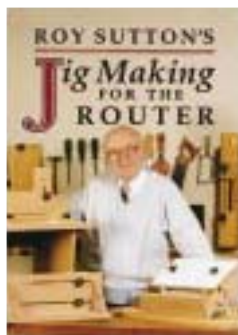
### Getting Started with your Router £9.99 inc. VAT

Roy Sutton guides the newcomer safely through the basics of routing and gives confidence to use the router effectively. It takes the viewer through setting up and using the components supplied with the machine.

### Jig Making for the Router

£14.90

Roy Sutton's vast experience comes together in this book. He gives advice on tools, materials, safety and general techniques. The making of jigs for forming joints, panel raising, louvered doors, ellipse cutting and edge planing is covered making it invaluable to all craftsmen.



# Special Offer

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**Trend information pack for all Schools and Colleges**



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**new**

# cutters

**Latest additions to the Trend cutter range**



## ◀ Staff Beads

Ideal for creating bullnose and half round mouldings on window boards, panels and table-tops. These TCT cutters are for cutting bead radii of 6, 8 and 10mm.

- 9/2x1/2TC (rad. 6mm) £42.95**
- 9/3x1/2TC (rad. 8mm) £47.60**
- 9/4x1/2TC (rad. 10mm) £49.25**

## Heavy Duty Ovolos

Three ovolo cutters ideal for fluting spindles and other decorative turned work. These ovolos have a small flat ground on the nose that produces a very fine cut, suitable for routing false panel mouldings and engraving work.

The 16/8X1/2TC cutter has a double ovolo mould effect.

- 16/5x1/2TC (rad. 18mm x 44mm dia.) £71.95**
- 16/6x1/2TC (rad. 25mm x 41.5mm dia.) £71.95**
- 16/8x1/2TC (rad. 6mm and 15mm) £74.95**



## Hinge Sinking Bits

Two new machine bits are now included in the range designed to drill the hinge recess for concealed cabinet hinges. With diameters of 20mm and 25mm each cutter is mounted on a 8mm shank.

- T420/20x8mmTC £7.85**
- T420/25x8mmTC £7.95**



## ▶ Template Profilers

Three new template profiling cutters, with shank mounted bearing guides, have been added to the range. The TCT two flute cutters are suitable for portable and table routing. The ball bearing guide is slightly larger in diameter than the cutter to minimise scoring.

- 46/96x1/4TC (12.7mm dia. x 32mm cut) £22.50**
- 46/100x1/2TC (25mm dia. x 25mm cut) £36.50**
- 46/101x1/2TC (25.4mm dia. x 45mm cut) £39.95**

## Straights - two & single flute

Two flute TCT straights for a clean finish and better quality of cut.

- 3/41x1/4TC (8mm dia. x 25mm cut) £17.50**
- 3/41x1/2TC (8mm dia. x 25mm cut) £17.95**
- 3/81x1/4TC (12.7mm dia. x 32mm cut) £19.95**
- 4/03x1/2TC (14mm dia. x 50mm cut) £35.95**
- Single flute straight for fast cutting
- 2/63x1/4TC (7.9mm dia. x 25mm cut) £18.25**
- 2/63x1/2TC (7.9mm dia. x 25mm cut) £18.25**

## Stepped Rebate

This 1/2" diameter shank TCT stepped rebate cutter is ideal for recessing shelving strip and other fittings.

- 36/2x1/2TC (14mm dia. x 8mm cut) £39.95**

## Panel Mould

This 1/2" shank version of Trend's popular TCT ogee panel mould cutter has an increased shank length making it ideal for creating panel mould effects on kitchen unit doors. It is particularly suitable for routing a wide mould in thin material.

- 18/01x1/2TC (3.2mm rad. x 25mm dia.) £40.23**

## Heavy Duty Ogees

Three TCT ogee cutters that are suitable for use on heavy duty routerlathes. They are ideal for fluting spindles and other decorative turned work as well as for ogee moulding. The 22/7x1/2TC cutter will also give an astragal mould effect.

- 22/08x1/2TC (rad. 19mm x 41.5mm dia.) £69.75**
- 22/7x1/2TC (rad. 22mm x 40mm dia.) £69.95**
- 22/10x1/2TC (rad. 30mm x 50mm dia.) £72.50**



## TCT Machine Bit

A 17mm TCT machine bit has been added to complete the Trend range. Sizes now range from 10mm to 36mm in increments of 1mm.

- 1004/17TC £33.62**



All prices exclude VAT

Winter 1997

# routing

## workshop



by John Perkins

A furniture maker and designer, John is well known for his articles and books on all aspects of woodworking.

*There are many ways of using the router, as a hand-held power tool, table mounted or fitted to a range of routing accessories, jigs and guides. However, the one thing that is common to all of these methods is that you will need some form of stand or bench on which to work.*

Only by providing a basic routing bench, large enough to work on, conveniently and comfortably, can you start to get the best from your routing equipment and ensure that you can work safely, accurately and efficiently.

The most obvious choice is to build a routing table, incorporating a range of clamping and holding methods. The ideal bench is rigid, stable and large enough to handle any size or shape workpiece (within reason) while carrying out a range of operations. Making such a bench will also offer the opportunity to build in certain features, avoiding the need for separate or free standing routing tables and machines, combining them in one accessible and convenient routing centre.

### Hand-held Operations

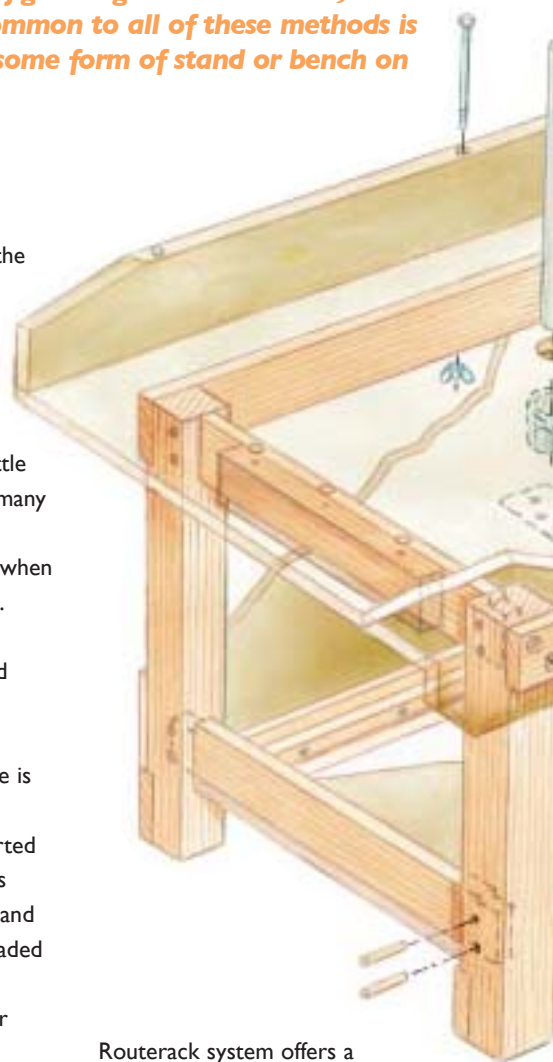
A flat, stable and rigid surface is essential for any hand-held routing operation. A purpose made bench can be fitted with versatile and adaptable clamping systems, such as Trend toggle and 'down-pivot' clamps, as well as integral vacuum clamping facilities. Permanent provision can also be made for securing purpose made jigs and mounting boards for accessories.

### Inverted Routing

An inverted routing table offers the easiest and most convenient method of routing. With the router securely mounted and the workpiece resting on a level surface, running against a square and rigid fence, there is little room for inaccuracy. However many proprietary tables tend to be on the small side, particularly when handling panel or sheet materials. With longer in-feed and out-feed surfaces, during edge planning and moulding with the back fence, or profiling with bearing cutters or template followers, the workpiece is better supported and easier to handle. The Trend range of inverted table routing accessories, includes pressure guards, profiling guards, and a range of levers, knobs and threaded inserts to allow you to build and adapt your own table to suit your requirements.

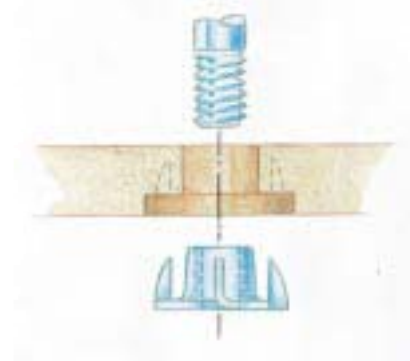
### Overhead Routing

Overhead routing offers advantages for specific operations such as pin routing, face relief work or any operation where it is necessary to see exactly what the cutter is doing, or where there will be inadequate material left to support the work on the machined face. The Trend

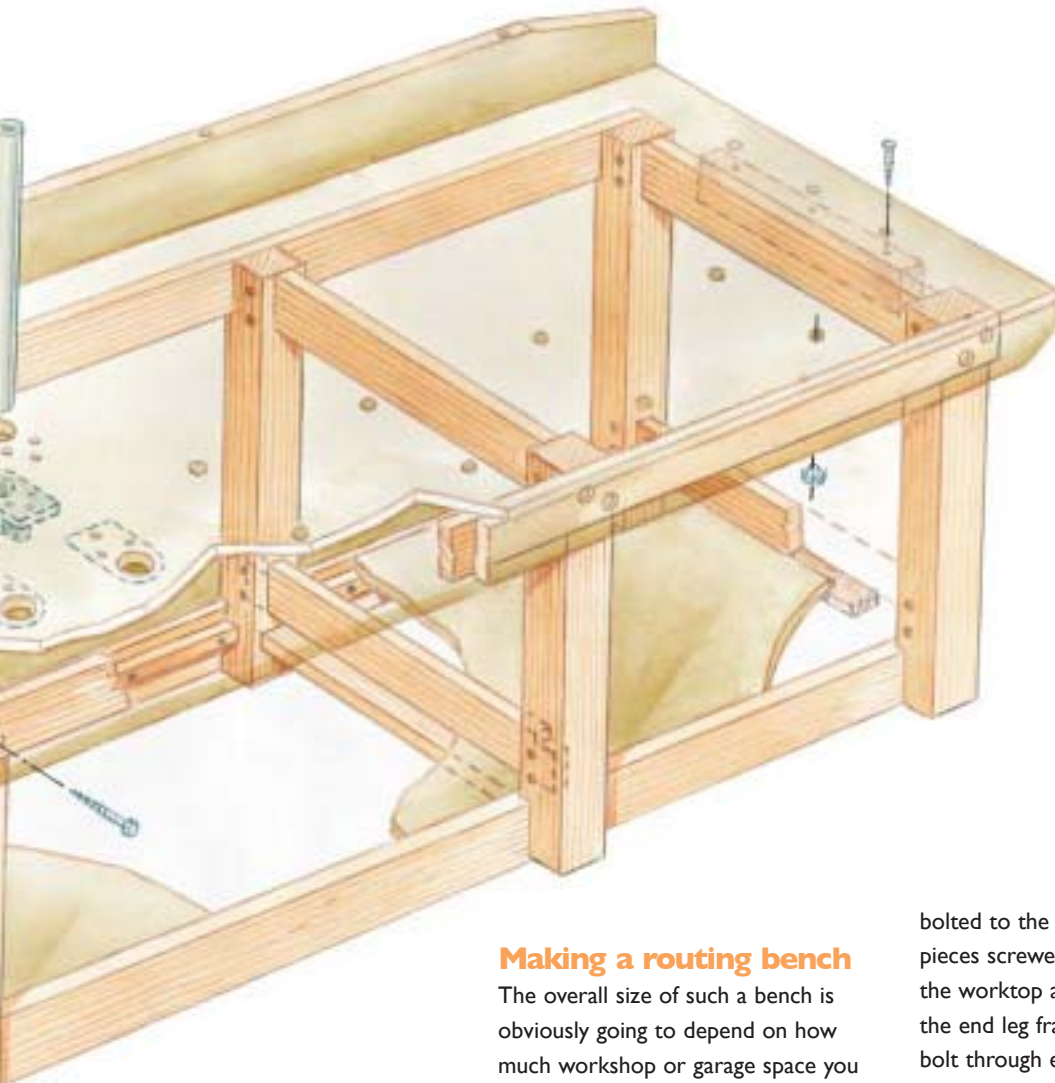


Routerack system offers a wide range of overhead mounting possibilities including router mounting plates and clamps and vertical and horizontal support pillars. These can be used to mount the router in the most advantageous attitude for a specific operation. A comprehensive range of guide pins and bushes are available for copy and batch production work.

Housings are cut on each assembled leg frame to accept the front and rear rails. Coach screws are used to fasten the rails, with their heads recessed flush with the rail face. Use two screws for each joint, staggering their vertical centres.



Recessed holes are drilled in the underside of the bench top to take the threaded inserts. Although their tangs prevent them from turning, it is advisable to run hot-melt glue around the edge of the recess to prevent the insert from being forced downward when inserting locking levers or holding down bolts.



### Routing accessories

A stable work surface is also essential when using routing accessories such as the Trend Routerlathe and Routergraph. A purpose made bench can be fitted with integral clamping and mounting points to ensure quick, easy and secure setting up, whenever the machine is required.

### Making a routing bench

The overall size of such a bench is obviously going to depend on how much workshop or garage space you have available, although if space is very limited it can also double as a general workbench. The overall size of our routing bench is 2140mm x 760mm. The height is 750mm but this can be altered to a more comfortable working height as required. The bench top is cut from 25mm MDF with a 110mm down-stand screwed to the front edge. A removable up-stand is fitted to the rear edge, either loose doweled or

bolted to the top. Down-stand pieces screwed to the underside of the worktop at either end, fit outside the end leg frames. A single coach bolt through each piece and the top rails of the two end leg frames, are used to secure the top.

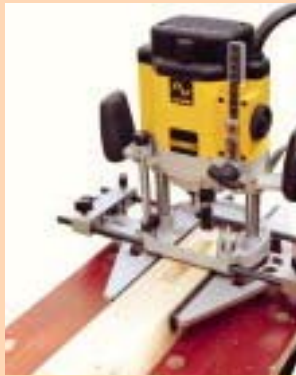
### The leg frames

The three legs frames are made up with 70x70mm legs joined by 110 x 26mm (Door lining) rails. Cut the six rails to a length of 570mm and mark out 55mm long tenons at each end. Gauge a tenon width of 22mm (or to suit the precise diameter of the available router





◀ **Cutting Rail Tenons**



◀ **Cutting Leg Mortises**



◀ **Levers or bolts can be screwed into the threaded inserts to hold jigs and stops**

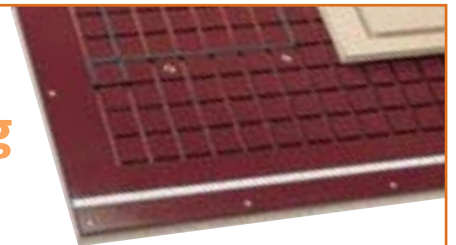


◀ **A work piece can be held on the bench using various clamping arrangements**

cutter). Clamp the four rails together, overhanging a flat surface. Set the router's side fence to cut an initial tenon width of 20mm (slightly less than the cutter diameter). Cut a rebate of this width across the ends of the four legs, cutting to the full shoulder depth of 24mm in a series of shallow steps of 3 to 4mm. Adjust the side fence to increase the tenon width and repeat the procedure until the full 55mm wide by 24mm deep shoulder is removed. Turn the timber over and then end to end and repeat this operation to cut the remaining tenon faces. Cut the six legs to length and mark out the position of the mortises on each. Set the side fence to centre the 22mm diameter cutter over the mortise (Any tendency for the cutter to pull away from the guide face can be eliminated by fitting a second fence on extended rods). A simple stop gauge, clamped to each leg in turn, will ensure that all mortises are positioned accurately and equal in length. Assemble the three leg frames, gluing and doweling

each joint. Wipe off any excess glue before leaving to dry. Mark out and cut the housings at the ends of each leg to take the long rails. Cut the four long rails to length and set out and drill the diagonally spaced holes to take the leg frame fixings (60 x 8mm coach screws). The middle leg frame is offset to allow an inverted router plate to be fitted in the centre of the bench top. Cut a notch in the leg frame cross rails to take the bottom front rail and screw the rail to the frames using coach screws fitted with washers. The top and rear rails are screwed, again using coach screws and washers, to the face of the leg frames. Storage can be added by fitting a base, back and sides to the leg frames, using 10mm MDF. The back and sides are screwed into the frame, the base being screwed to battens screwed to the rails. Do not glue the panels to the frame as they will need to be removed if you decide to fit an inverted router plate or attach fittings in the future.

## Vacuum Clamping



**The bench top can also be fitted with a vacuum chuck for holding various regular or irregular shaped workpieces. Connected to a small vacuum pump, a vacuum chuck provides secure clamping with fast alignment and quick release of the workpiece.**

## Technical Support

**Technical support lines are available for practical advice on all aspects of routing and Trend products.**


**01923 224681**

**Monday to Friday 9am - 5pm**



▲ John Tigg - Trend Technical Manager

## Hand held routing

For hand-held routing operations, various methods of clamping are possible. These include traditional cramps, clamping onto the top overhang and front down-stand. However, for many routing operations, threaded inserts fitted in a regular pattern across the top offer a flexible arrangement. These allow toggle clamps and stops, fitted to clamping boards or chucks to be used for specific applications. Threaded inserts can also be used for securing accessories and jigs or for holding work directly to the bench. Although traditional bench vices can be fitted to the front of the bench, they can cause an obstruction for some routing operations. Temporary vice mountings and alternative methods of clamping long workpieces vertically to the front of the bench are worth considering. 



◀ A stable bench is essential for mounting shop-made and proprietary jigs and ancillary equipment. These can be simply clamped to the bench top or down-stand, or bolted through threaded inserts set into the work surface.

▶ A tube clamp bolted to the underside of the top, provides a stable mounting for the Trend Routerack overhead system. Various forms of back fence can then be cut from thick board or laminated sheet to suit specific operations, retained and adjusted by locking levers screwed into threaded inserts. Adjustable fence faces can be added to suit.



◀ Trend Routerack pillar base clamps can also be fitted for mounting the Trend Routerack inverted table, allowing it to be quickly removed from the bench to be used for other applications. Mounting the table in this way provides easy access for cutter changing and cutting depth adjustment.



## Safety First

For safety, it is advisable to fit an easily accessible no-volt release switch to the bench for use in all routing operations. The Trend NVRS 230v switch is suitable for use with all 230-240 volt routers up to 1850 watts. Fitted with a large headed emergency knock-off button, the switch will trip the instant the power supply fails. The switch should be fitted where it is easily accessible for routing operations on the bench, as well as for inverted table routing and similar operations where the machine switch is not easily accessible.



▶ Trend No-Volt Release Switch  
Ref. NVRS/230V

Trend Pushstick  
Ref. PUSHSTICK/1



on



# CRAFT SUPPLIES ACADEMY

**The Mill, Millers Lane, Dale, Nr Buxton, Derbyshire SK17 8SN**  
Tel: 01298 871636  
Contact: Eve Middleton

**Location:** Courses held in the old mill at Millers Dale which forms part of the Peak National Park. Breathtaking views, unspoilt countryside and sympathetically designed buildings.

**Accommodation:** Full board accommodation available at the Routing Centre.

**Places of Interest:** Chatsworth House, Haddon Hall, caverns of Castleton, Pavilion Gardens, Opera House at Buxton, Matlock Baths and Bakewell.

**Facilities:** Crafts gallery, large showroom, refreshments, book and video library.

**Course Content:** After an introduction on router features and safety, you continue into your project for the course, a dressing table top drawer and elliptical pivot hung mirror. These incorporate hand-held routing, tenoning, dovetailing, rebating and moulding techniques. The course will also introduce the use of the dovetail jig, ellipse jig and table routing.



**Lecturer:** Bob Lambert  
**Experience:** Highly qualified and confident instructor of the router and experienced jig maker and user.

**Course Dates in 1997**  
Two Day Courses  
November 3-4  
Further dates available

**Course Prices**  
Two Day **£150**



# NORTHERN CRAFTS BLACKPOOL

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



**Lecturer:** Paul Wenlock  
**Experience:** Wealth of Elu/DeWalt and Trend knowledge. Many years in the woodworking industry including demonstrating and lecturing on routing techniques.

**Location:** Close to Blackpool South railway station. Within walking distance of all amenities.

**Accommodation:** Can be arranged by course organiser

**Places of Interest:** Pleasure beach, Blackpool Tower, Lake District, Blackpool Golden Mile Illuminations.

**Facilities:** Free refreshments and choice of lunch. Large showroom.

**Course Content:** Router safety, features, accessories, basic uses, edge moulding, carving, biscuit jointing, tenoning, Routerlathe turning. All aspects dealing with router control and discipline. The project made on this course is a small occasional table.



**Course Dates in 1997**  
Two Day Courses  
October 20-21, 27-28  
Further dates available

**Course Prices**  
Two Day **£150**  
with £25 voucher redeemable against goods

**Free £25.00 voucher**

**for all course students**

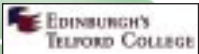
Redeemable towards the cost of any products sold by Northern Craft & Power Tool Co. Ltd





# COURSE

a guide to routing courses in the UK



The following profile highlights Trend's national network of Routing Training Centres where students with little or no experience of routing can learn to appreciate its possibilities and where the more advanced can keep up to date the latest innovations in jigs, accessories and ancillary routing equipment.



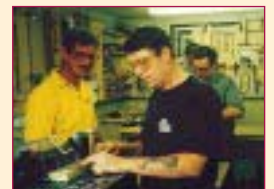
**Course Dates in 1997**  
**One Day Courses**  
 October 11  
 November 1, 8 & 29  
 December 13

**Course Dates in 1998**  
**One Day Courses**  
 January 17 & 31  
 February 14

**Course Prices**  
**One Day £60**




**Lecturer:** Wayne Crickmore  
**Experience:** 15 years experience with Elu and Black & Decker product training and a wealth of woodworking product knowledge.



**Free video**

**Course Dates in 1997**  
**One Day Courses**  
 October 10  
 November 7 & 21  
 December 5

**Two Day Courses**  
 October 2-3, 16-17  
 November 13-14

**Course Dates in 1998**  
**One Day Courses**  
 January 23  
 February 6 & 20  
 March 6 & 27  
 April 24  
 May 8  
 June 5 & 19

**Two Day Courses**  
 January 29-30  
 February 26-27  
 March 19-20  
 April 30- May 1  
 June 11-12  
 July 2-3, 16-17

**Course Prices**  
**One Day £67**  
**Two Day £125**




## OAKLANDS COLLEGE SCHOOL OF CONSTRUCTION

St Peters Road, St Albans AL1 3RX

Tel: 01727 847070

Contact: Jeanne O'Reilly

**Free video**

**Location:** Situated in the town centre of the Roman city of St Albans (Verulamium).

**Accommodation:** Hotels and guest houses within short walking distance.

**Places of Interest:** Cathedral, historic buildings, shopping precinct and parklands.

**Facilities:** Course includes free refreshments and lunch available from the refectory within the Oaklands campus.

**Course Content:** The routing course has run successfully for 6 years and

provides a one day elementary course designed for the beginner. This deals with an introduction to the router, its features, and safety aspects. The two day course, targeted at the professional and the ambitious amateur, takes the art of Routing a stage further, giving a broader look at table routing and jigs. All students can expect a full day of tutorials and hands-on experience.



**Lecturers:** Ken Morton & Bruce Marsh  
**Experience:** Careers in wood machining and furniture making. Several years lecturing on the subject of routing.





## TEESSIDE COLLEGE

**Douglas Street, Middlesbrough TS24 2JW**

**Tel: 01642 300100**

**Contact: Andy Batty/Julie Dodds**

**Location:** Situated close to the port area of Middlesbrough.

**Accommodation:** Hotels and guest houses within short distance.

**Places of Interest:** Hartlepool historic quay, ancient fishing town of Whitby, North Yorkshire moors and railway.

**Facilities:** Vending machines, college canteen.

**Course Content:** A combination of instruction and hands-on including basic router use, router accessories, cutter identification, jigs and attachments, table routing.



**Lecturer:**

Ian Coning

**Experience:**

Working life dedicated to the woodworking industry. Several years lecturing on the subject of routing.

One-to-one courses available through Eaglescliffe Woodcrafts on 01642 786449

**Lecturer:** Ian Coning



### Course Dates in 1997

#### One Day Courses

October 17  
November 7  
December 5

#### Two Day Courses

October 30-31  
November 20-21  
December 11-12

### Course Dates in 1998

#### One Day Courses

January 9 & 30  
February 13  
March 6 & 20  
May 1 & 22  
June 12 & 27  
July 9 & 24

#### Two Day Courses

January 15-16  
February 5-6, 26-27  
March 12-13, 26-27  
April 23-24  
May 14-15  
June 4-5, 18-19  
July 2-3, 16-17

### Course Prices

One Day **£54.95**  
Two Day **£109.95**



## EDINBURGH'S TELFORD COLLEGE

**Crewe, Toll,  
Edinburgh EH4 2NZ**

**Tel: 0131 332 2491 Ext 2229**

**Contact: Stuart Telford/Derek Brown**

**Location:** Situated on the periphery of the city of Edinburgh.

**Accommodation:** Hotels and guest houses in the local area. Accommodations officer on site.

**Places of Interest:** Edinburgh Castle, Holyrood Palace, Salisbury Crags, Princes Street and the Royal Mile.

**Facilities:** Leisure complex, sports facilities, refectories, vending machines, study centre.

**Course Content:** Three, one day courses are available. The first deals with Router introduction, safety, control, and the general use of the Router. The second deals with the router at a more advanced level and use of jigs and templates. The third demonstrates the use and advantages of jigs for trade and industry.



**Lecturers:**

Stuart Telford & Gregor Allen

**Experience:**

20 years experience in the woodworking industry and more recently in building education to advanced levels.



### Course Dates

To be arranged, please phone for details

### Course Prices

#### One Day:

Basic Router

Advanced Router

Trade Router

**£75**  
**£75**  
**£75**



# coming soon...

## confirmation of new routing courses:

### SOUTH WEST YANDLES

**Matlock, Somerset**

**For details: 01935 822207**

### NORTH WALES NEATH COLLEGE

**Dwr-y-felin Road, Neath, Wales**

**For details : 01639 634271**

# contemplating templates

**One of the most skillful aspects of routing is in the designing and making of templates for repetitive operations such as hinge recessing or the batch production of individual components.**

The basic purpose of a template is to guide the path of the cutter either by means of a fixed pin, guide bush or guide bearing. To do this the edge contour of the template must reflect the exact contour of the component and rest assured, any faults or irregularities will also be faithfully reproduced! For all high quality work, templates must be cut from fairly dense materials such as non-shattering plastics, aluminium, medium density fibreboard (MDF) or Tufnol. This is to ensure that they remain stable with no risk of warping or the grain rising. Template edges must be cut square and smooth, ideally using a router cutter guided by a straight edge, trammel or other fixed guide edge. Alternatively the template can be cut with a jigsaw or bandsaw, but the edges will need to be finished square and smooth by filing and sanding.

## Workshop-wise

Most templates tend to be cut for specific purposes, often integral with some form of jig to position and hold the work. However, there are many general purpose templates that can be cut and kept for everyday use in the workshop. One particular application that frequently arises is the cutting of circles and circular recesses and is

one that lends itself ideally to template routing. However, to avoid the need to cut a new template for each occasion or set up a trammel to do the job, it is far more productive to keep a range of circle templates at the ready.

Cut as individual templates, or as a multiple one, a range of circle diameters used in conjunction with a full range of guide bushes, allows flexibility in achieving any required circle diameter. Alternatively, templates of different diameters can be quickly cut

using the existing ones.

Use a trammel to cut the initial templates, although having cut one hole, the guide bushes can be used to cut further sizes.

Check that all the edges are square and smooth and clearly mark on each one its actual diameter. It is also worthwhile jotting down a table of the guide bush diameters to allow quick calculations to be made. Always leave adequate room on the template surround for clamping without interfering with the router. Always follow the correct feed direction, that is against the rotation of the cutter. A multiple circle template is ideal for making simple workshop

accessories such as tool racks.

Made from laminated faced MDF and clear 6mm perspex, a template was used to cut most of the slots and



**Hand tools  
supplied  
courtesy of:-**  
Mail Order Specialists  
**J SIMBLE & SONS**  
76 Queens Road  
Watford  
Herts WD1 2LD  
Tel: 01923 226052



holes to suit each individual tool. The rack was assembled using spacing tubes and 8mm threaded rod secured with washers and dome nuts.



Arrange the tools carefully to make maximum use of the shelf area, ensuring that there is adequate room to remove and replace individual items easily.

A vernier gauge can be used to check the hole diameter or slot width and length required for each tool before adding the guide bush margin.

These holes can be cut out using flat bits, twist drills or hole saws, finishing the edges square and smooth.

To secure the template, drill two holes in each edge to accept a pair of pin clamps. When cutting thick material, it is recommended that a long reach cutter is used to ensure that an adequate shank length can be held in the collet.



# Furniture focus



Tom's experience gained while running his own carpentry business has proved invaluable to the Trend Technical team.

by Tom Rogers

Neatly and accurately cut, comb joints are visually acceptable on utility furniture, instrument boxes and casework, but are not generally used on decorative furniture and artifacts



due to their 'mechanical' appearance. However to achieve a more aesthetically pleasing effect, the interlocking grain pattern can be further enhanced by cutting a bead detail along the joint length. This can be carried out using the inverted router fitted with a bearing guided beading cutter.

The comb joint is initially cut using a Comb jointer set (Trend Ref. 876) or on a comb jointing jig such as the Elu/DeWalt multifunctional jig. Alternatively the joints can be cut on a saw bench or by hand.

Prepare all the timber, finishing the edges square and true. Set up the cutter or jig and cut each mating end, alternating each pair to leave the top and bottom edges flush. Glue and



clamp the joints until dry, before planing and finishing the joint faces flush.

Select a beading cutter with a bead diameter equal to the length of the comb fingers. Set up the cutter in the inverted router table, and adjust the cutter height to cut the full joint width.

When cutting small workpieces on the inverted router table, fit a false face across the back fence to prevent the work turning into the cutter at the start and finish of the pass.

A range of beading cutters (see the Trend 1997-98 catalogue, pages 30 to 31) are available from Trend, suitable for cutting both small or large diameter beads, machining from either face in turn.

