

# 30 ROUTING TECHNIQUES

FOR TRADESMEN & HOME IMPROVERS

4

*A guide to setting up and using your router and cutters.*

# CONTENTS

<b>1</b>	<b>INTRODUCTION</b>	<b>3-11</b>
	1.1 Safety first	4
	1.2 Holding the work	6
	1.3 Templates and guide bushes	8

<b>2</b>	<b>WINDOWS &amp; DOORS</b>	<b>12-36</b>
	2.1 Fitting window boards	12
	2.2 Hinge recessing	14
	2.3 Mortising door locks	16
	2.4 Cutting apertures for letterboxes	18
	2.5 Trimming a door to length	20
	2.6 Arched mouldings	22
	2.7 Vision panels in doors	24
	2.8 Routing mortise and tenons	26
	2.9 Fitting intumescent strip	28
	2.10 Tenon shoulder scribing	30
	2.11 Rebating windows to accept double glazed units	32
	2.12 Repairs to rotten external joinery	34
	2.13 Installing routerseal	36

<b>3</b>	<b>KITCHEN &amp; BATHROOM</b>	<b>38-47</b>
	3.1 Joining kitchen worktops	38
	3.2 Concealed hinges for kitchen doors	40
	3.3 Solid panelling	42
	3.4 Concealing pipework and cables	44
	3.5 Inspection holes in flooring	46

<b>4</b>	<b>JOINERY</b>	<b>48-57</b>
	4.1 Joining of boards	48
	4.2 Trimming and edging	50
	4.3 Stopped groove or housing	52
	4.4 Construction of raised panel doors	54
	4.5 Straightening edges	56
	4.6 Joint housing	57

<b>5</b>	<b>DECORATIVE MOULDINGS</b>	<b>58-68</b>
	5.1 Moulding decorative edges	58
	5.2 Routing decorative barge boards	60
	5.3 Skirting, architrave and dado	62
	5.4 Corner blocks	63
	5.5 Fluting and chamfering	64
	5.6 Corner edging or lippings	66
	5.7 Trade Range cutters	68

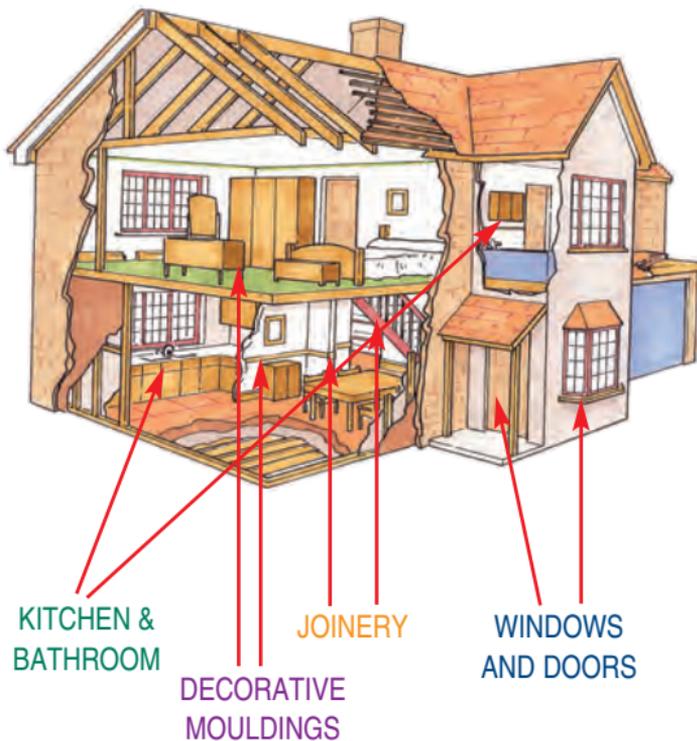
# 1

# INTRODUCTION

The use of the router for jobs on-site and around the home is certainly under estimated. In this booklet we will be illustrating thirty simple examples of its application.

The router is the most suitable tool to use for many applications simply because it will get the job done quicker and will give a far superior finish than when using other power tools. Sometimes, applications just simply cannot be done any other way.

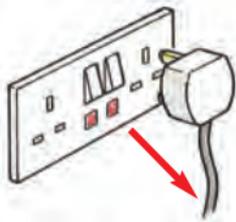
We have divided this booklet into five sections. Section 1 gives an introduction into safety, holding the work and use of templates. The other four sections are grouped into Windows and Doors, Kitchen and Bathroom, Joinery, and Decorative Mouldings.



## 1.1 SAFETY FIRST

▲ Always switch off the router and isolate from the mains supply when changing cutters or making adjustments to the router.

▲ Before re-connecting to the mains supply, make sure the power switch is in the 'off' position.



▲ Ensure that the power cable is kept well away from the cutter and cannot tangle or catch on the workpiece, jig or fittings.

▲ Check before starting to cut that clamps will not obstruct the path of the router. When cutting through the full thickness of the material, ensure that the cutter cannot foul the vice, bench edge or other obstacles beneath the workpiece.

▲ Some construction sites only allow the use of 115v power tools and this may be a deciding factor when purchasing power tools.

▲ When routing, a flat and stable work table is essential.

▲ Always wear eye protection such as goggles or a visor and wear ear defenders if routing for a lengthy period.

▲ Do not allow loose clothing to dangle over the work area. Roll sleeves up and ensure long hair is tied back.

▲ Keep fingers clear of the cutter and never touch any part to try to slow or stop the cutter.



▲ Practice the procedure first before switching on and concentrate carefully on what you are doing.

▲ Wear a dust mask or respirator.

▲ Use dust extraction wherever possible. Many routers have dust guards as standard or as an accessory.

▲ Take care when handling cutters as they are sharp. Store them carefully.

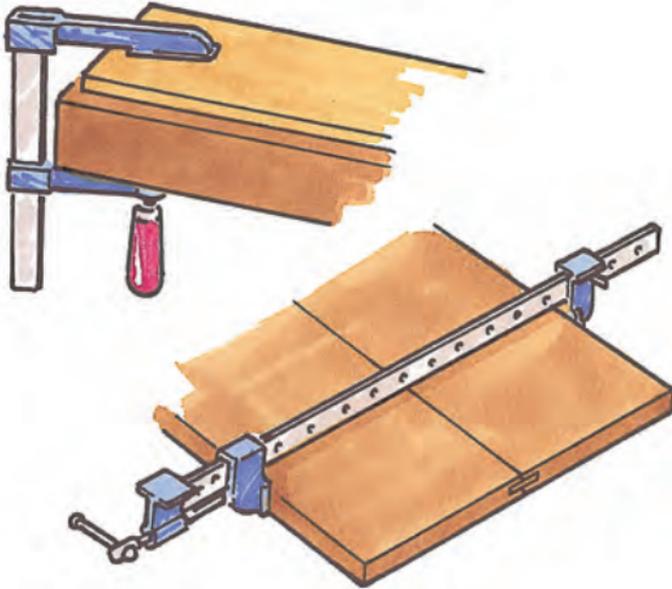
▲ Always feed the cutter into the material against the rotation of the cutter.

▲ Do not switch on the router with the cutter in contact with the workpiece.

▲ Make sure the router has come to a complete stop and isolate the power before making adjustments.

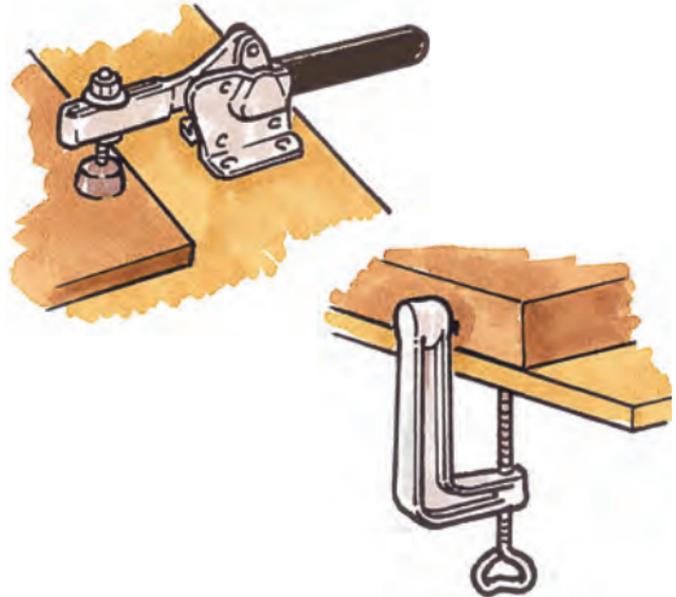
▲ Where possible release the plunge lock and retract the cutter.

## 1.2 HOLDING THE WORK



**1.** Quick-action clamps are effective for holding the workpiece or jig to the bench and can be positioned in seconds. Sash cramps or Trend Clamp Guides are ideal for holding larger sections for preparation and assembly.

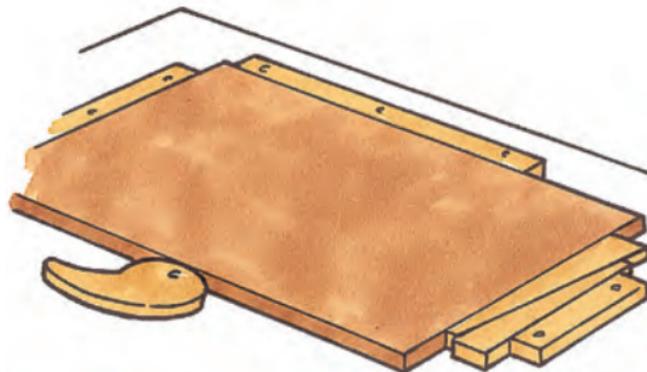
**2.** Toggle clamps are useful where repeated clamping is required such as on work-holders and support jigs. Alternatively if an obstruction free surface is required, end socket clamps can be used and require a 9mm hole in the material or waste-piece.





**3.** In situations where clamps or other mechanical devices are impractical, pins may be used. Where these may spoil the workpiece, double-sided tape or hot-melt glue can be used. This will only work if the material is flat, clean and dust-free.

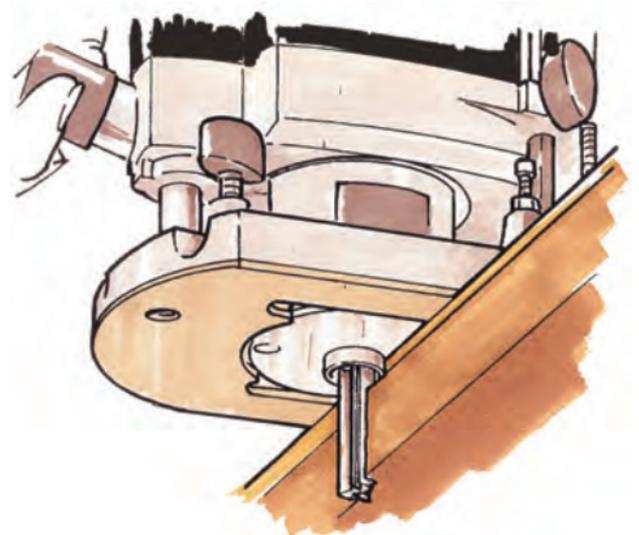
**4.** Cams, blocks and wedges used with a sacrificial top may be more practical, where the workpiece may be large and its surface irregular. They combine a quick-release facility together with an obstruction-free surface for the path of the router.



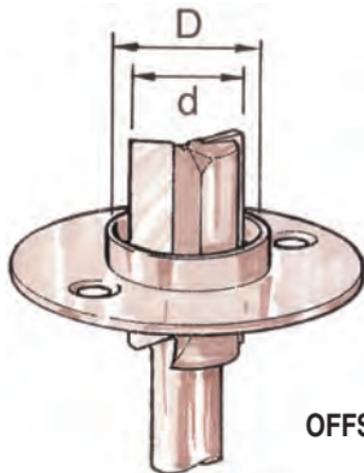
## 1.3 TEMPLATES & GUIDE BUSHES



A template is often used to simplify demanding copy routing operations or as an accurate method of speeding up repetitive work. It also reduces the risk of spoiling expensive materials. The use of a template will therefore provide a solution for a whole range of possibly otherwise difficult operations.



A guide bush is used for guiding the router around the template. The guide bush itself, with its base fitted flush into the base of the router, has a bush flange concentric to the cutter. This runs against the edge of the template. Templates can be cut from any piece of smooth sheet material that is easy to work with and finish. The material depth must be greater than the flange depth of the guide bush.



$$\text{OFFSET} = \frac{D-d}{2}$$

When designing the template shape remember that the difference between the cutter and the outside guide bush diameter needs to be allowed for. This offset is calculated by deducting cutter diameter (d), from the outer guide bush diameter (D) and dividing the remainder by two. For external templates deduct this amount from each edge of the template. For internal templates add this amount to each edge of the template.

DIA. CUTTER	Ref.	GUIDE BUSH															
		GB10	GB11	GB12	GB14	GB16	GB17	GB18	GB20	GB22	GB24	GB26	GB28	GB30	GB32	GB40	
inches	mm	10	11	12	14	16	17	18	20	22	24	26	28	30	32	40	
mm	mm	3.5	4	4.5	5.5	6.5	7	7.5	8.5	9.5	10.5	11.5	12.5	13.5	14.5	18.5	
7/64	3	-	3.9	4.4	5.4	6.4	6.9	7.4	8.4	9.4	10.4	11.4	12.4	13.4	14.4	16.4	
1/8	3.2	-	-	3.5	-	5	6	6.5	7	8	9	10	11	12	13	14	
5/32	4	-	-	-	3.8	4.8	5.6	6.1	6.6	7.6	8.5	9.6	10.6	11.6	12.6	13.6	
3/16	4.8	-	-	-	-	3.5	4.5	5.5	6	6.5	7.5	8.5	9.5	10.5	11.5	12.5	
13/64	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
7/32	5.5	-	-	-	-	4.2	5.2	5.8	6.2	7.2	8.2	9.2	10.2	11.2	12.2	13.2	
15/64	6	-	-	-	-	-	4	5	5.5	6	7	8	9	10	11	12	
1/4	6.3	-	-	-	-	-	-	3.8	4.8	5.4	5.8	6.8	7.8	8.8	9.8	10.8	
5/16	8	-	-	-	-	-	-	-	4	4.5	5	6	7	8	9	10	
23/64	9	-	-	-	-	-	-	-	-	3.5	4	4.5	5.5	6.5	7.5	8.5	
3/8	9.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
25/64	10	-	-	-	-	-	-	-	3.8	4.2	5.2	6.2	7.2	8.2	9.2	10.2	
7/16	11	-	-	-	-	-	-	-	-	3.5	4.5	5.5	6.5	7.5	8.5	9.5	
15/32	12	-	-	-	-	-	-	-	-	-	4	5	6	7	8	9	
1/2	12.7	-	-	-	-	-	-	-	-	-	-	3.6	4.6	5.6	6.6	7.6	
-	13	-	-	-	-	-	-	-	-	-	-	-	3.5	4.5	5.5	6.5	
5/8	15	-	-	-	-	-	-	-	-	-	-	-	-	3.5	4.5	5.5	
-	16	-	-	-	-	-	-	-	-	-	-	-	-	-	4	5	
-	18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	
23/32	18.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3.9	
3/4	19	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3.5	
-	20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
7/8	22.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3.9	
1	25.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4.9	
1-1/8	28.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5.9	
1-1/4	31.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6.9	

■ = offset

The offset for specific guide bush sizes and cutter diameters is shown in the chart above. Choose a guide bush that allows at least 2 to 3mm clearance around the cutter to allow the waste to clear.



Guide bushes are available in different diameters to allow various diameter cutters to be accommodated. Many makes of router do not offer a range of guide bush sizes. Therefore a sub-base should be fitted to the base into which the full range of guide bushes can be fitted. These are available in diameters of 10mm to 32 in 2mm increments and also in 11, 17 and 40mm size.

Templates for use with guide bushes should not be made from too thick a material otherwise it will restrict the depth of cut. MDF, hard plastics and phenolic are ideal materials to use as they are flat and stable.

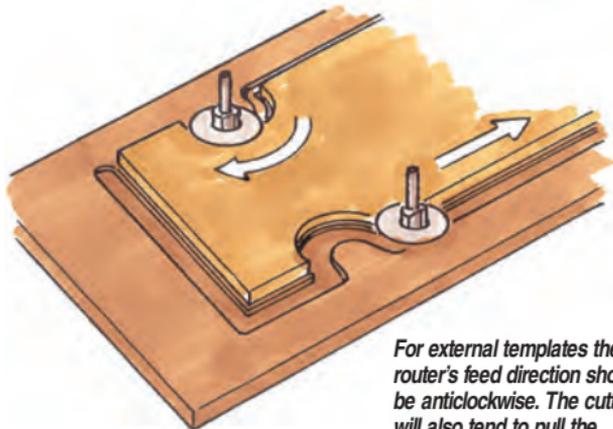
### 1.31 Template Construction

To construct a template, often jigsaws or other power tools can be used to remove the bulk of the waste. But take time to make sure that the template edges are free from irregularities, as they will be reproduced in the finished workpiece. Often the router itself can be used to shape or produce the required slots and apertures in the template.

### 1.32 Feed Direction

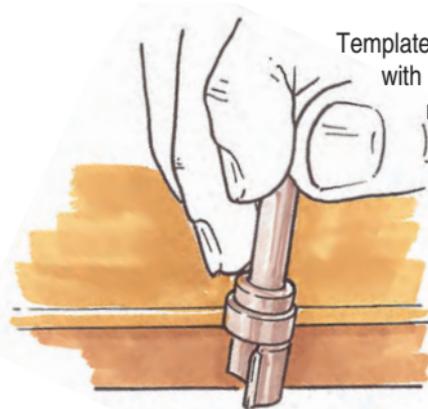
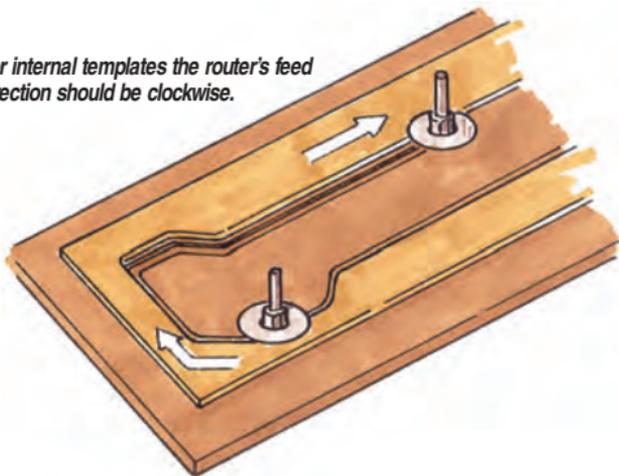
When routing, follow the correct feed direction, depending on whether it is an internal or external template.

Keep the bush flange tight against the template and upon completion of the cut, release the plunge to withdraw the cutter rather than lifting the router away.



*For external templates the router's feed direction should be anticlockwise. The cutter will also tend to pull the router towards the template.*

*For internal templates the router's feed direction should be clockwise.*



Templates are also ideal for use with cutters having shank mounted bearings. The advantage over guide bushes is that the final shape will exactly match the template, making the template construction easier.

Shank mounted bearings facilitate deep cutting and profiling. In operation, the first cut is made with the bearing engaging the template and thereafter deeper cuts are made with the bearing following the board edge (see pages 158/159).



Cutter ref. 11/40



Cutter ref. 18/55

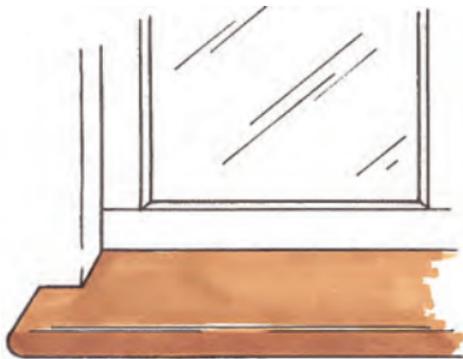


Cutter ref. 13/40

[www.trend-uk.com](http://www.trend-uk.com)

# 2 WINDOWS & DOORS

## 2.1 FITTING WINDOW BOARDS



After installing a new window or replacing a tiled window-ledge, timber window boards can be purpose made.

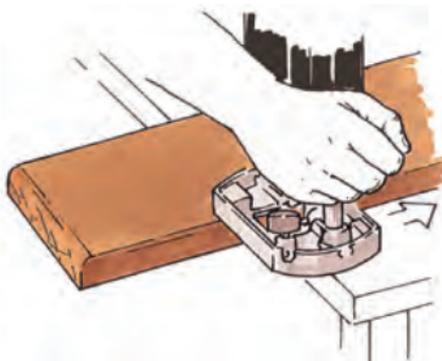
**1.** Allow for the overhang at either end when calculating the length of timber required. Choose the size of overhang to match those in other rooms.

Cutter ref.  
46/150X1/4TC

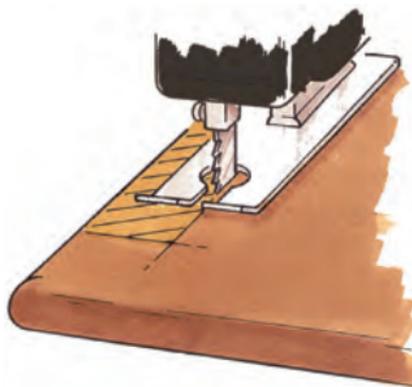


**2.** A bull-nose moulding will be required on three of the edges. For 1" (25.4mm) thick board, use a 1/2" (12.7mm) radius rounding-over cutter, Trend ref. 46/150X1/4TC or similar. Adjust the height of the cutter so that the top quirk is just clear of the top surface. The roller bearing fitted to the end of the cutter acts as the guide and runs along the centre of the board edge.

**3.** Make sure the board is well clamped and rout across the end-grain first. Then repeat this procedure for the other end and finally rout with the grain. Invert the board and then repeat this procedure to complete the bull-nose moulding. Always rout in the correct direction as shown.



**4.** Notch each end with a jigsaw and place in position. For fixing the board in place, countersink and counterbore holes for the screws. To conceal the holes, use a matching plug-maker, cutting plugs from a section of waste board. This can be carried out by fitting the router with a one-piece drill/countersink cutter and a plug-maker.



## ROUTING TIPS

- 1.** Make sure there are no imperfections in the edge before routing to prevent replication in the mould.
- 2.** Always make a trial cut on a scrap piece of material to ensure the correct settings have been made.
- 3.** Rout the end-grain first before routing with the grain, to prevent 'breakout'.
- 4.** Use the depth-stop, so that the cutter can be retracted safely after each operation, without losing the depth setting.

## 2.2 HINGE RECESSING

Hinges can be recessed quickly and accurately with a light duty portable router fitted with a 1/2" diameter two flute cutter.

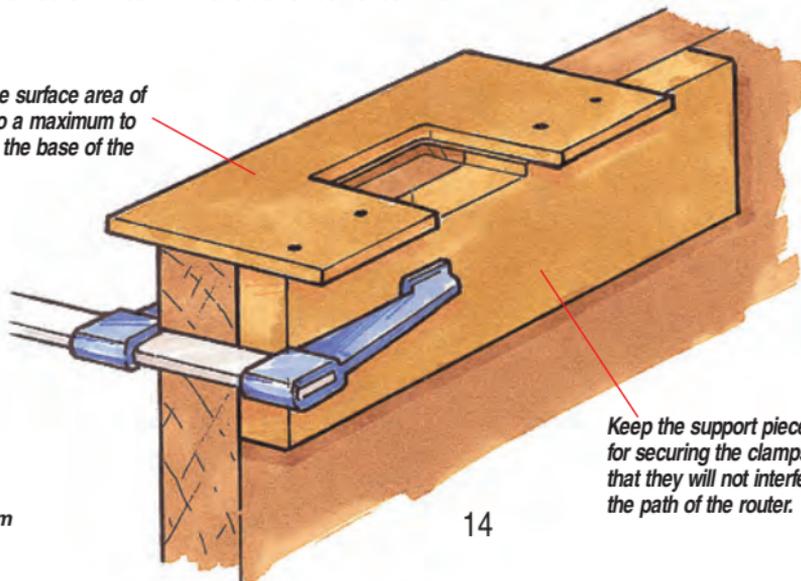
**1.** First construct a jig from MDF or plywood. Mark out the aperture according to the size of the hinge leaf. Allowance must be made for the offset between the outside of the guide bush and the cutter diameter. Providing the template material is square, use the router fitted with a side-fence to cut the aperture.

**2.** Mark accurately the required positions of the hinges on the door and the frame.

**3.** Clamp or pin the jig in turn for each recess and rout in a clockwise direction.

**4.** Remove the small radius in the corners with a chisel.

*Keep the surface area of the jig to a maximum to support the base of the router.*



*Keep the support piece deep, for securing the clamps so that they will not interfere with the path of the router.*

Cutter ref.  
4/2X1/4TC



**5.** When setting the router to cut the correct depth, the depth of cut can be pre-set using the hinge leaf itself.

**A.** Place the router on the edge of the door and plunge the cutter until it touches the surface.

**B.** Activate the plunge lock and release the depth stop.

**C.** Place the leaf between the turret stop and the depth stop and tighten the depth stop.

**D.** Withdraw the hinge leaf. The depth is now accurately set to recess the hinge leaf.

*Hinge placed  
between depth stop  
and turret stop*



## THE TREND HINGE JIG



*Bradawl  
For securing jig to  
door or frame*

*Aperture block  
For adjustment to  
set hinge length*

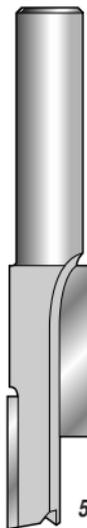
*Edge stop  
For adjustment to  
suit width of hinge*

*Aperture  
Guide bush follows this*

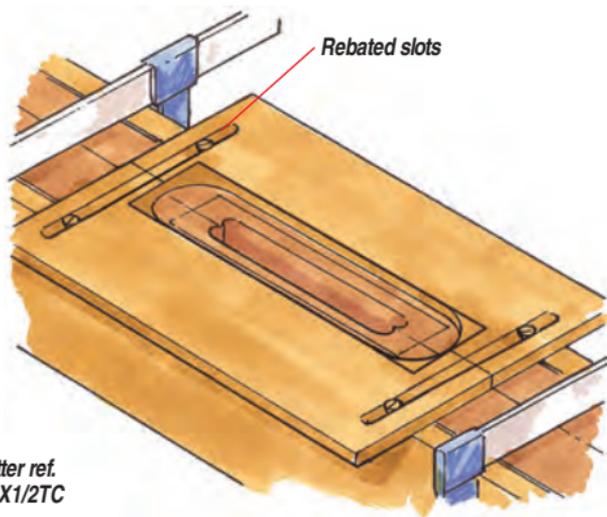
*Swivel end plate  
To locate on end of door  
to give 2mm clearance*

This is a portable template jig designed for recessing hinges in wooden doors and frames. The apertures and edge stops are initially set and the template is then ready for accurate recessing of the frame and the door without adjusting the jig.

## 2.3 MORTISING DOOR LOCKS

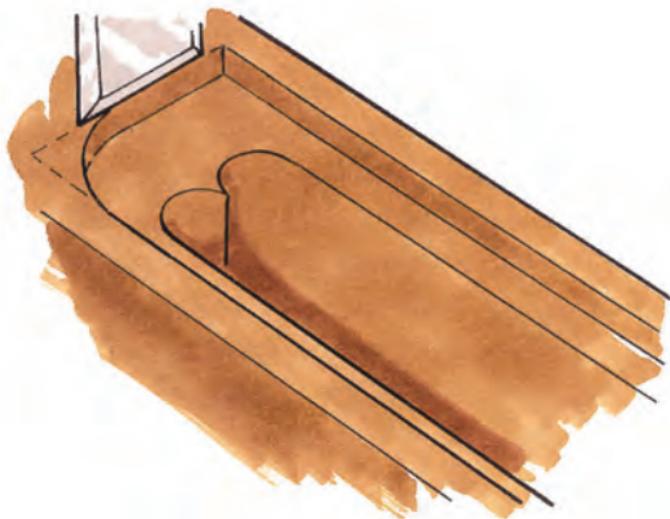


Cutter ref.  
5/53X1/2TC



**1.** Mark the centre line on the door edge at the height required for the lock. Mark the length of the mortise and position of the spindle. When fitting a number of locks of the same type and size, making a jig which offers savings on time and productivity is essential.

**2.** This jig uses two guide bushes with different diameters to first produce the mortise and then the recess for the faceplate, lock and spindle apertures. Rebated slots on the face of the jig allow for correct positioning for different widths of doors.



**3.** Clamp the jig to the door using a quick action clamp. A 32mm guide bush is used for mortise and a 26mm guide bush for the face plate. Rout in a clockwise direction around the aperture. Remove the rounded corners of the recess of the face plate with a chisel. Increase the depth of the mortise with a chisel or 3D-Bit® if the lock body is over 75mm in length.

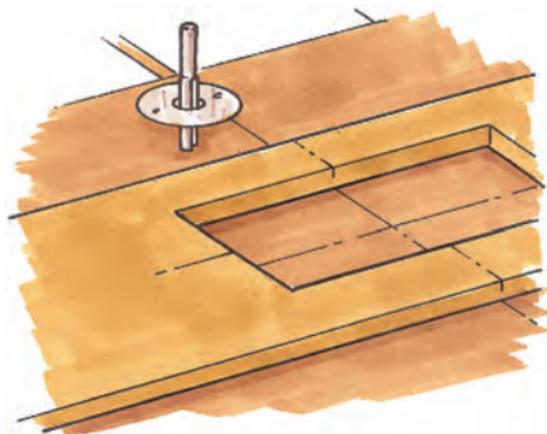


**4.** Before fitting the lock, the spindles and key hole apertures on either face must be cut. To allow easy removal of the lock when fitting it, leave it in the locked position i.e. with the bolt protruding.

## 2.4 CUTTING APERTURES FOR LETTERBOXES



Cutter ref.  
3/83DX1/2TC

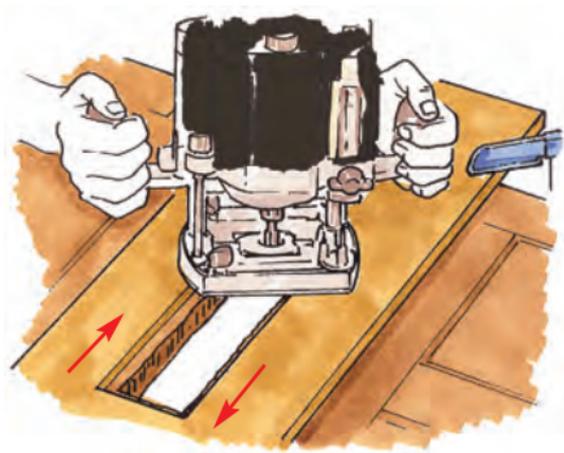


The router is ideal for producing letterbox openings, as the cut will be square, straight and clean.

**1.** Mark the position of the aperture on both sides. Score the position on the opposing face to prevent splintering when the cutter breaks through.

**2.** Make a template from either plywood or MDF, allowing for the offset between the cutter and the guide bush.

**3.** Place the jig on to the door and secure with clamps or double sided tape. Fit a 30mm guide bush and a two flute cutter Ref. 3/83DX1/2TC into the router.



**4.** Rout in a clockwise direction around the aperture, taking several passes to complete the operation.

If the letterbox has a sprung flap, rebate the aperture to cater for this.

## THE LETTERBOX JIG



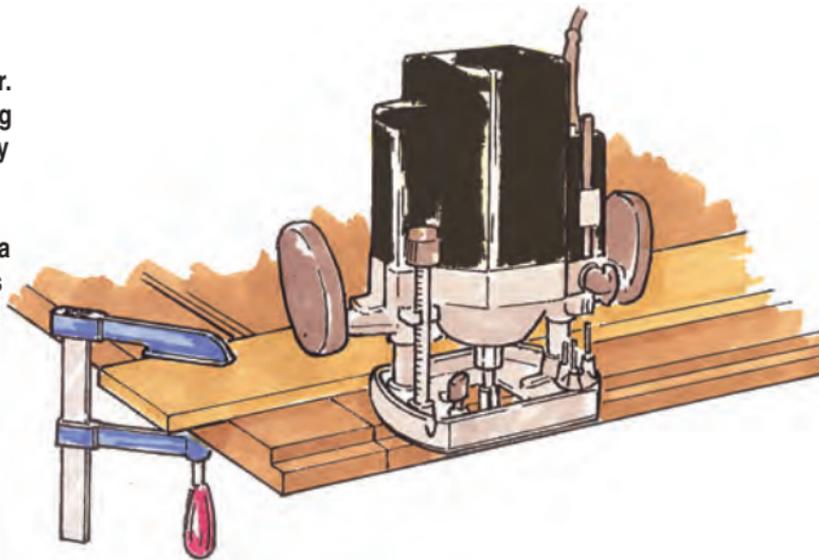
The Trend Letterbox Jig is an ideal adjustable template system for routing recesses in doors quickly and accurately. The jig has a size-adjusting device which ensures the template aperture is always square. Produced from aluminium, it will cater for apertures from 210 to 310mm long and from 46 to 82mm wide.

## 2.5 TRIMMING A DOOR TO LENGTH

When trimming doors to length, the cutter must have enough length to cut the thickness of the door. This will in most cases necessitate the use of a long reach cutter with 1/2" shank cutter and a heavy duty router.

The trimming operation could be carried out using a clamped batten with the side of the router acting as the guide fence.

Alternatively it could be done using a guide bush and a template.



**1.** Remove the door and mark the required length. Score it on both sides with a marking knife to prevent any feathering.

**2.** Measure the distance from the outside edge of the cutter to the straight edge of the base.

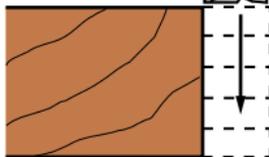
**3.** Clamp a batten guide this distance away from the marked line.

**4.** Cut in several passes at increased depths until the full width is reached.

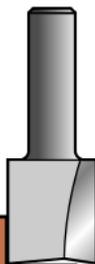
Cutter ref.  
3/83DX1/2TC



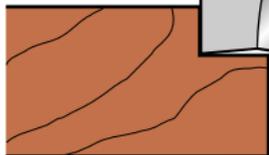
When trimming internal doors many passes are taken to prevent overloading the cutter and the router.



Cutter ref.  
4/2X1/2TC



The same procedure is used for external doors when a rebate is required.

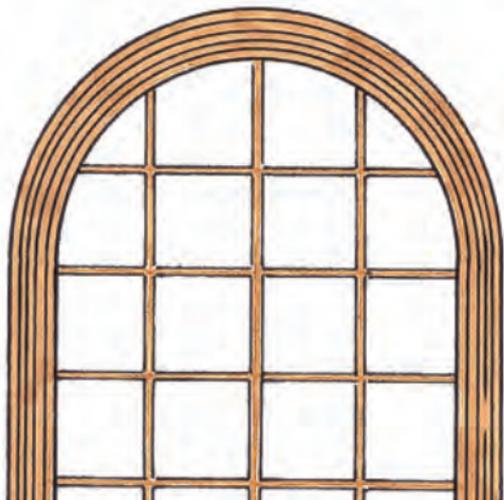


## THE CLAMP GUIDE SYSTEM



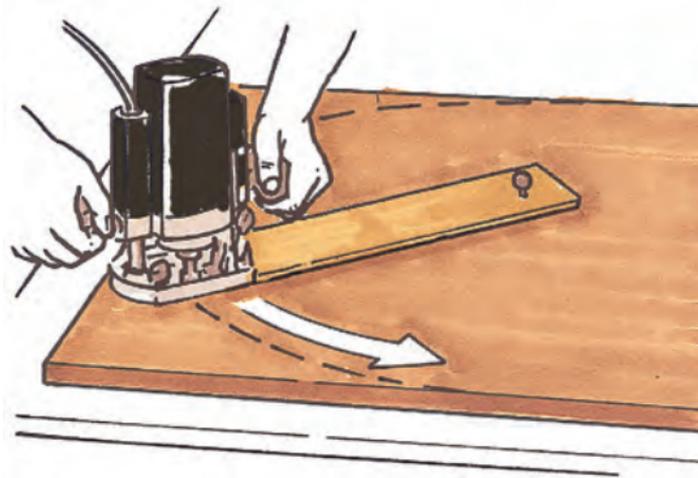
These are available in three sizes 24", 36" and 50". They have integral quick clamping mechanisms for clamping onto the material. They can be used for marking and setting out and for guiding portable saws, jigsaws or routers.

## 2.6 ARCHED MOULDINGS

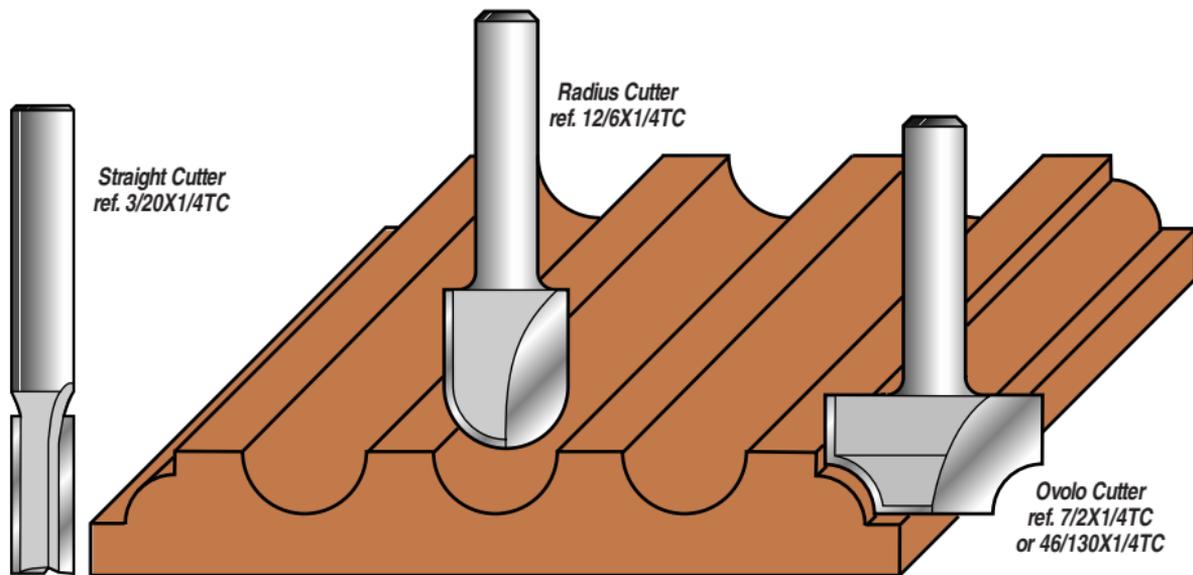


Decorative edgings for archways or arch formers for brickwork can all be made using a simple beam trammel attached to the router.

**1.** Construct the beam trammel from 1/4" (or 6mm) plywood and 4" (100mm) in width. The length will depend on the diameter of the arch.



**2.** To fix the router securely, a 30mm guide bush fitted to the base of the router locates in a pre-drilled hole in the end, allowing for adequate support for the router. Alternatively, the wood trammel can be screwed onto the base of the router using two of the threaded holes in its base.

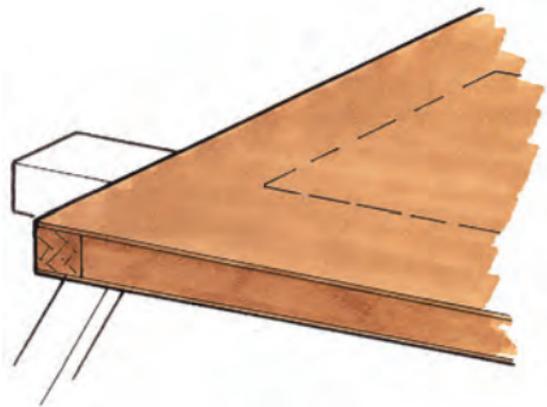


**3.** A pin is used to pivot the trammel. This can either be a screw or nail, or a bolt which is drilled through the plywood allowing the trammel to rotate.

**4.** A decorative mould can be built up, using a variety of panelling cutters. Flute spacing and depth of cut can be adapted to suit.

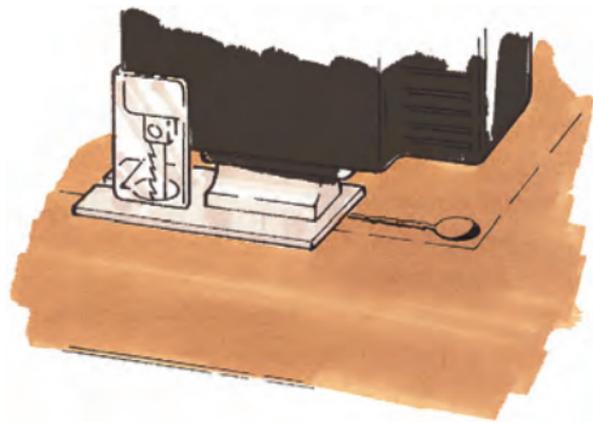
**5.** The next operation is to cut the arch with a straight cutter and remove the waste. Reposition the router and repeat for the inner radius. The moulding of the inner and outer edges can be carried out either by using an ovolo cutter before cutting the arch free, or afterwards using a bearing guided ovolo.

## 2.7 VISION PANELS IN DOORS



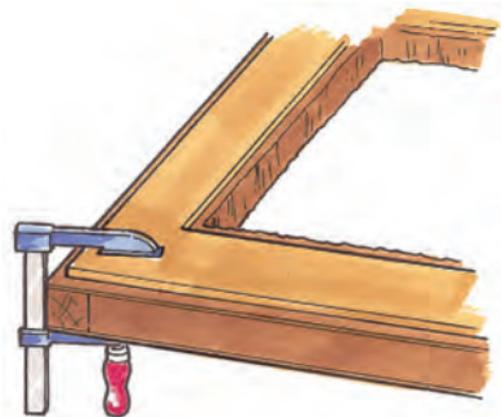
With the enforcement of fire regulations, vision panels often need to be cut into existing doors. When a number of doors require this, then the router and a template become invaluable.

**1.** Remove door from frame and lay door flat on two trestles and mark the size of vision panel required.



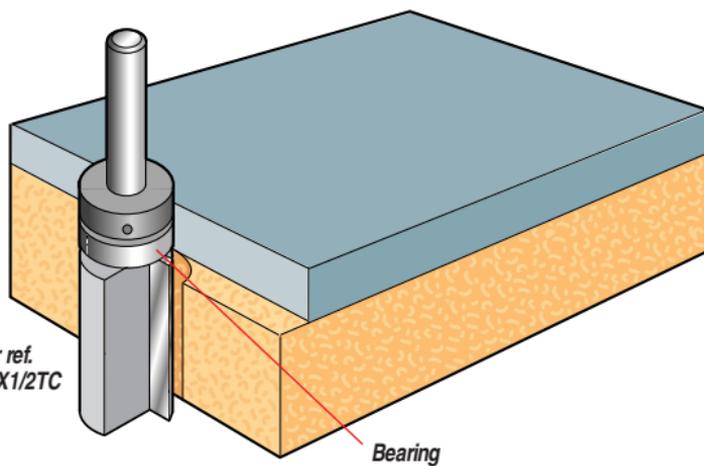
**2.** Score with a knife on both sides, especially across the grain to avoid any feathering.

**3.** Drill holes inside the four corners of the required aperture and cut with a jigsaw from corner to corner leaving 3mm of waste on the inside all the way round.



**4.** Construct a template from 12.7mm MDF. It's aperture should be the same size as for the vision panel. Allow enough material in the template to support the router and to prevent clamps interfering with the path of the router.

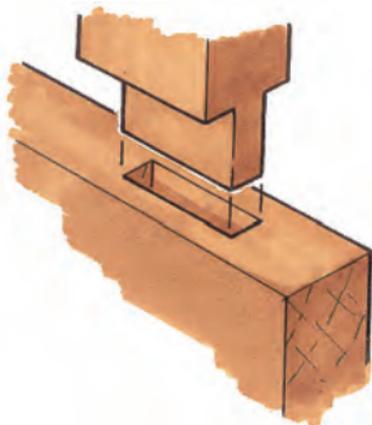
**5.** Clamp the template into position.



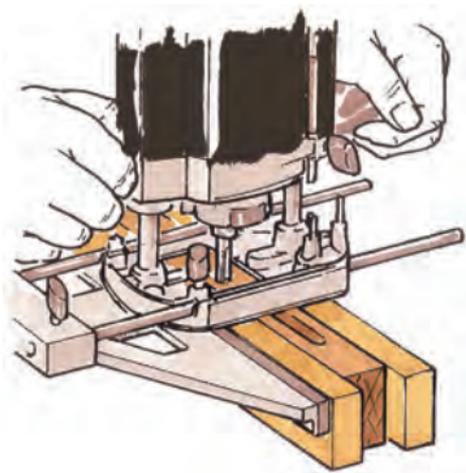
**6.** Fit a heavy duty router with a template profiler cutter Ref. 46/09X1/2TC and trim the aperture in a clockwise direction.

**7.** Square the radiused corners with a jigsaw. With hollow doors timber strips should be inserted and glued for mounting the glass. Finally fit glazing bead and glass in position.

## 2.8 ROUTING MORTISE AND TENONS



Cutter ref.  
3/20LX1/4TC

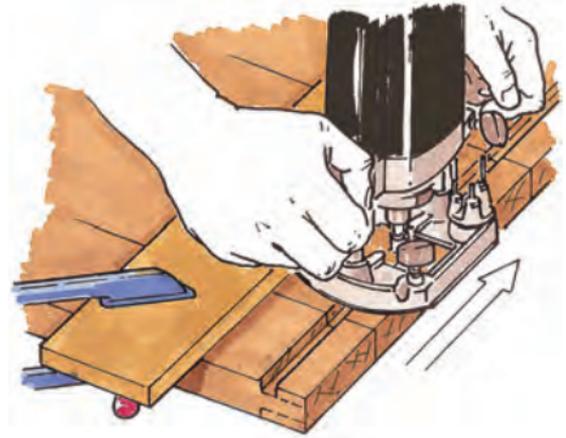
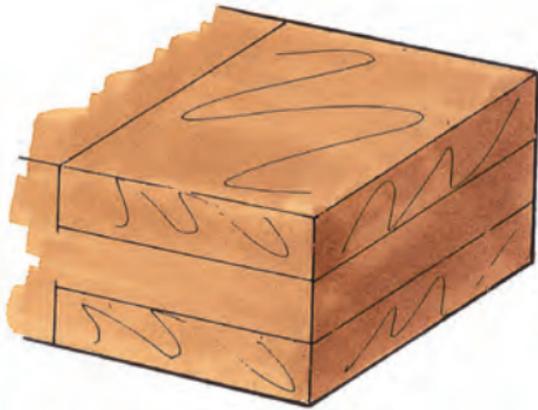


Both the mortise and the tenon can be produced quickly and accurately with the router and a sidefence.

**1.** First mark the position of the mortise. This is usually equal to a third of the material width. Mark the underside if you require a through tenon.

**2.** Whenever possible choose a router cutter equal to the width of the mortise. Clamp support pieces either side to provide extra stability for the router base.

**3.** Plunge down at either end of the mortise, remove the middle section in a number of passes.



**4.** When routing a through mortise, leave the same settings of the side-fence and repeat on the underside of the timber.

**5.** Square both ends of the mortise with a chisel.

**6.** Use the pre-cut mortise to determine the width and length of the tenon.

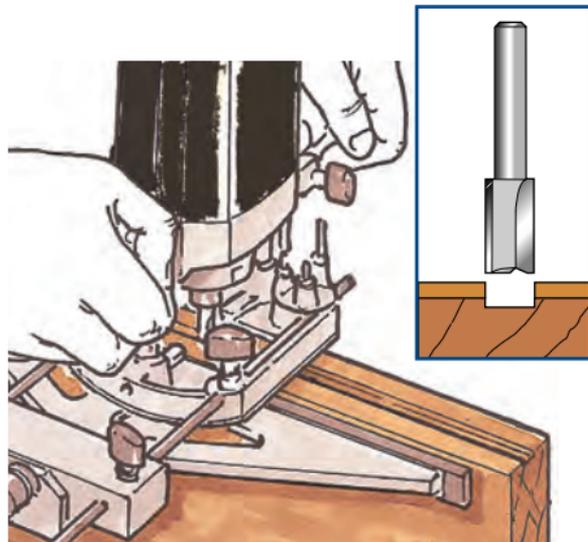
**7.** Clamp the timber sections with the tenons side by side and cut the shoulders simultaneously. Using a batten to guide the router.

**8.** Remove the rest of the waste by working the router freehand. Work towards the shoulder line, thus leaving a good support for the router.

## 2.9 FITTING INTUMESCENT STRIP

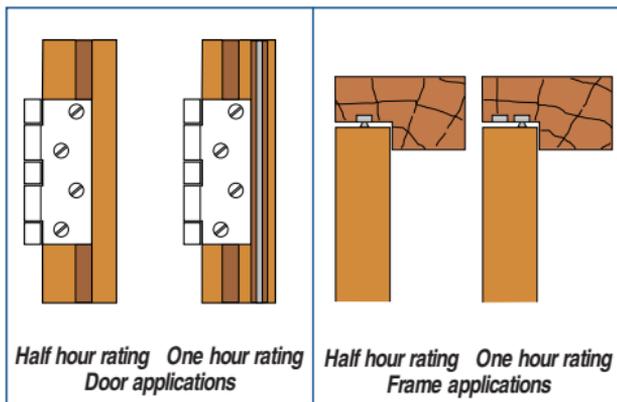


Often doors and frames in domestic and industrial applications are subject to fire regulations and are graded according to their construction with a fire rating. Safety regulations specify the fitting of intumescent strips and smoke-seals. These have to be recessed in order not to interfere with the operation of the door.



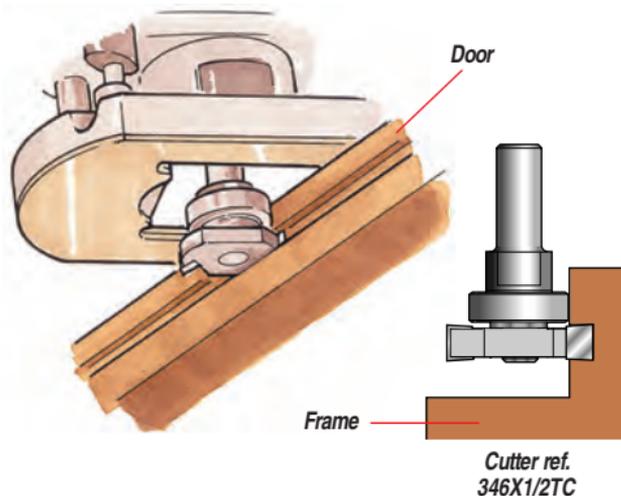
A 10mm diameter straight cutter Trend Ref. 3/6X1/4TC can be used to create the groove for intumescent strip. It is used in conjunction with a light duty router fitted with its side-fence.

- 1.** Holding the door vertically, firstly remove the door furniture and mark the position of the strip on the door edge.



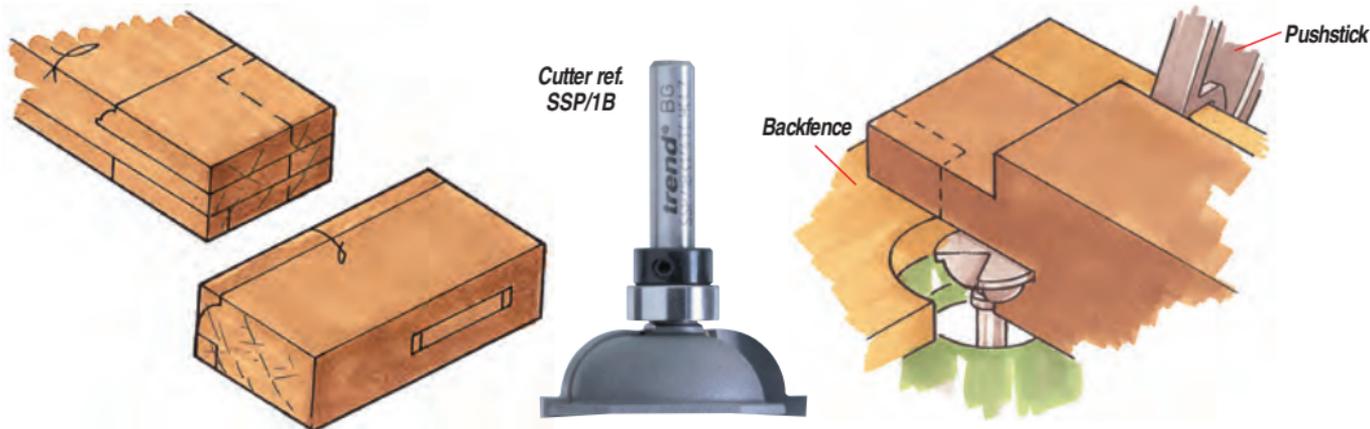
*Please refer to the local authority fire officer for the precise requirements for your area.*

- 2.** Adjust the side-fence and the depth of cut to suit the strip. Rout along the length of the door in the correct direction.
- 3.** For one hour ratings or wide strips a second pass will be necessary after adjusting the side-fence. Repeat procedure for remaining edges.



- 4.** Alternatively, use the Trend Intumescent strip cutter set Ref. 346 for 10mm strip or Ref. 348 for 15mm strip. The Intumescent strip cutter sets consist of a T.C.T groover and bearing mounted on an arbor. It works on the face of the door or alternatively on the face of the frame allowing the strip to be inserted into the rebate. Being bearing guided it reduces setting up time and the slotter will also give a better finish than a conventional two flute cutter.

## 2.10 TENON SHOULDER SCRIBING

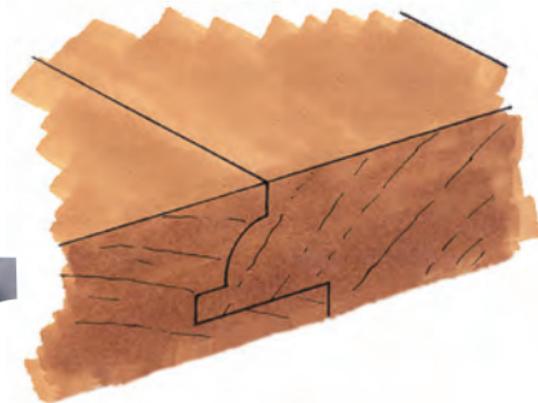
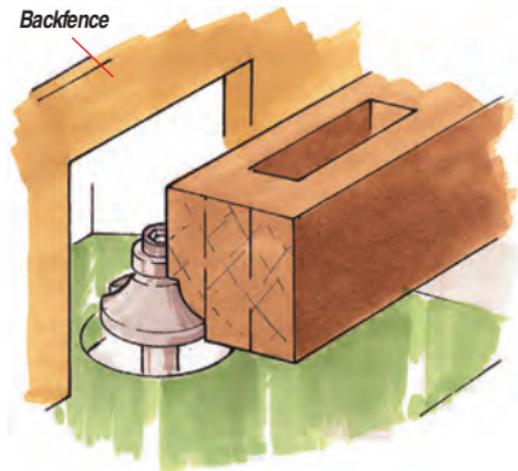


The shoulder scribe joint between mortise and tenon of a profiled frame requires special tooling. Matching cutters are available to machine the profile on rails and stiles and scribe the shoulder of tenons in 35mm and 44mm doors and framework.

**1.** First prepare the timber sections to the correct dimensions. Mark the position of mortise, tenons and the shoulder detail on the rails.

**2.** Cut material to length, allowing for a small amount of waste at both ends of the stiles. Cut the mortise into each stile, see page 152 for details.

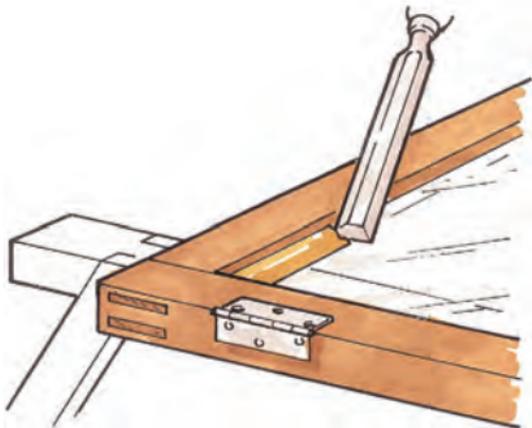
**3.** The tenon is then routed to suit the mortise. The shoulder scribe should be mounted in a table to provide greater accuracy with the backfence modified so as not to obstruct the tenon.



**4.** Use a piece of waste material behind the rail to prevent splintering. This is known as a 'splinch piece'. With the shoulders of the tenons complete, cut the profile on the stiles and rails. Once again, mount the profiler in the table with the bearing on the cutter slightly proud of the backfence to govern the depth.

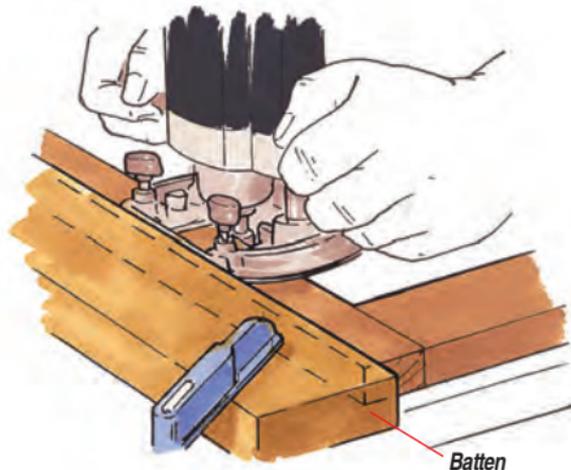
**5.** Before applying any glue, test the joint by dry fitting and assembling the workpiece. When you are satisfied apply the glue and cramp-up while the glue sets.

## 2.11 REBATING WINDOWS TO ACCEPT DOUBLE GLAZED UNITS



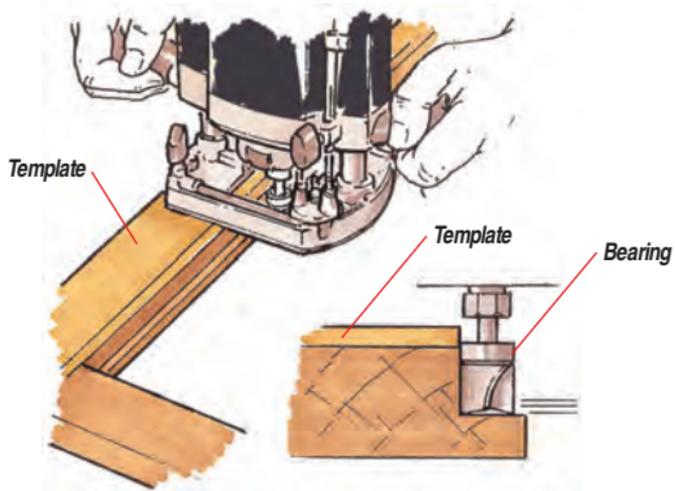
Single glazed windows can be upgraded with sealed double glazed units without having to replace the frame or the sash.

**1.** First remove the putty and any brads or pins which hold the glass in position.

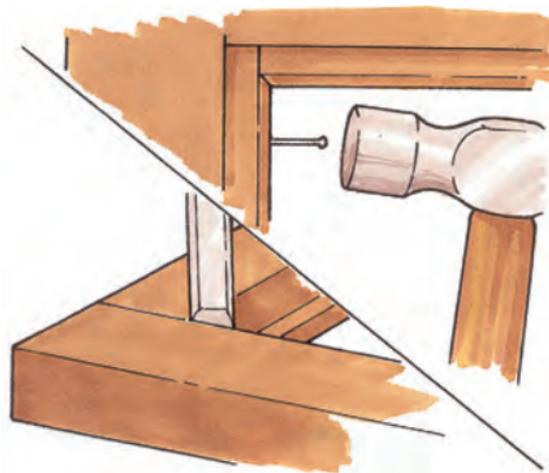


**2.** Remove the glass carefully then clean the rebate of debris. The depth of the rebate will require deepening with a router. This can be achieved in different ways:

**3.** Fit a straight fluted cutter such as a 3/6X1/4TC. Using a batten as a guide for the router, place the cutter edge against the rebate and fix the batten against the side of the router. Repeat for all sides.



**4.** Alternatively, the rebate can be cut with a bearing guided profiler Ref. 46/92X1/4TC which will initially follow a straight edge clamped to the sash and then follow the edge of the rebate as it cuts deeper.



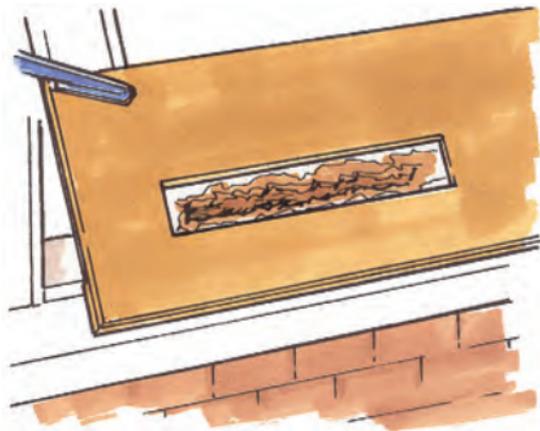
**5.** Square the corners of the sash to remove the radius left by the cutter. Apply a bead of silicone or putty to the rebate before inserting the new double glazed units.

**6.** Finally secure the glazing beads with pins, additional silicone on the back edge will keep moisture out.

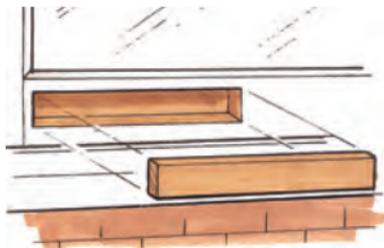
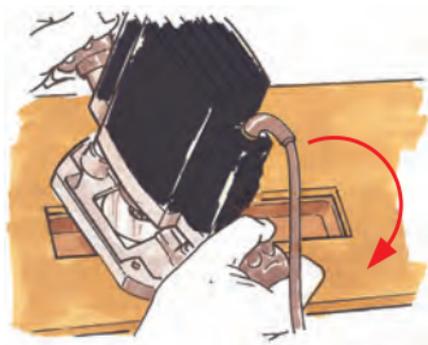
## 2.12 REPAIRS TO ROTTEN EXTERNAL JOINERY



**1.** Timber windows can often be affected by the weather. Often wet rot will be confined to only one certain area. It is therefore more economical to simply replace the rotten section with new timber and thereby add ten more years to an otherwise sound window. This can effectively be done with a hand router.



**2.** First remove loose rotten timber from affected area. Open the sash and make sure it is well supported. Make a template from a piece of 12.7mm MDF, leaving it wide enough to clamp and support the router. Mark out the correct size of aperture and cut it out either with a jigsaw or router and a sidefence.



**3.** Fit the router with a 30mm diameter guide bush and 16mm cutter (Trend ref. 4/26). Secure the template to the window with clamps rather than screws to avoid marking the surface. Machine the rotted area, taking a number of passes with the router in a clockwise direction.

**4.** Remove radiused corners with a chisel and cut a timber insert to suit the recess, leaving the thickness slightly larger to allow for finishing to obtain a good fit. Treat all exposed timber surfaces with a preservative before gluing. When the glue has cured, use a hand plane to blend timber insert flush with the sash.

Cutter ref  
4/26X1/4TC



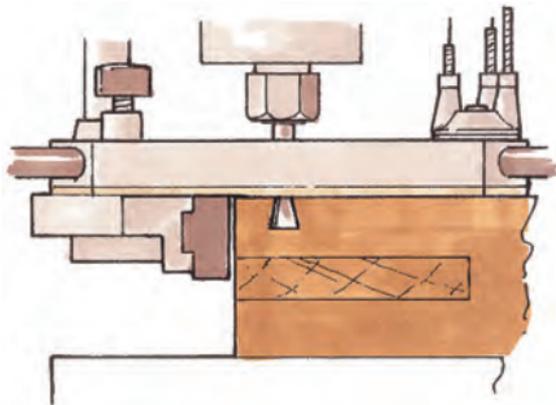
## ROUTING TIPS

- 1.** When making the template allow not only for the removal of the rotten timber but a significant proportion of the surrounding area.
- 2.** Where possible avoid routing too close to the joint between rail and stile which would weaken the window.
- 3.** Choose a cutter and guide bush that allows good clearance for the swarf.
- 4.** Choose a cutter that has a sufficient length of cut to obtain the depth required.

## 2.13 INSTALLING ROUTERSEAL



*Dovetail Cutter  
ref. 31/10L*

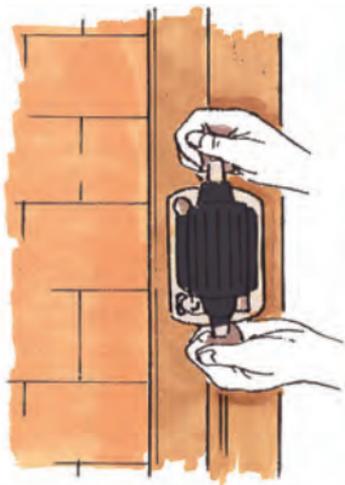


Trend Routerseal incorporates a dovetail barb which provides a simple self-fixing system, without requiring a gluing operation.

The seal can be used on the frame or the sash, by first using a matching dovetail cutter Ref. 31/10L to form a channel into which the seal is tucked.

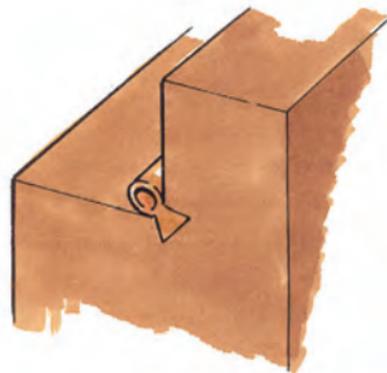
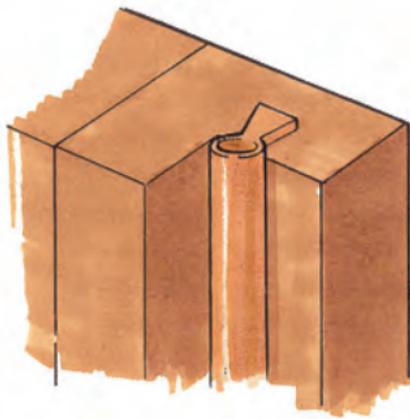
Remove the sash from the frame and use the sidefence on the router to act as a guide.

The seal is inserted in the face of the closing side of the sash and will compress when in contact with the rebate.



The seal is very versatile and can be routed into the apex of the rebate in the frame.

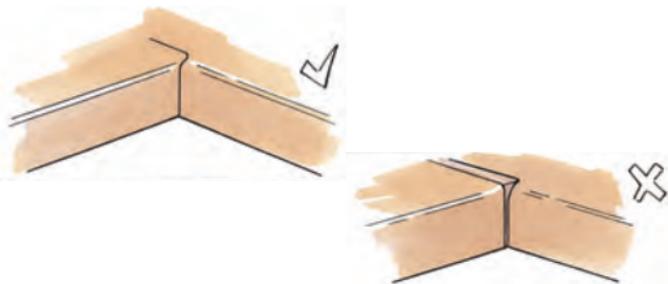
When routing in situ, the base is guided along the frame edges. As the corners of the frame will cause an obstruction, a chisel will be required to complete the job.



For insertion, the seal is easily slid in from one end of the rail or stile, or tucked into the apex or closing face of the frame. The corners should be mitred and silicone can be applied where the seal meets to prevent moisture entering the hollow section.

# 3 KITCHEN & BATHROOM

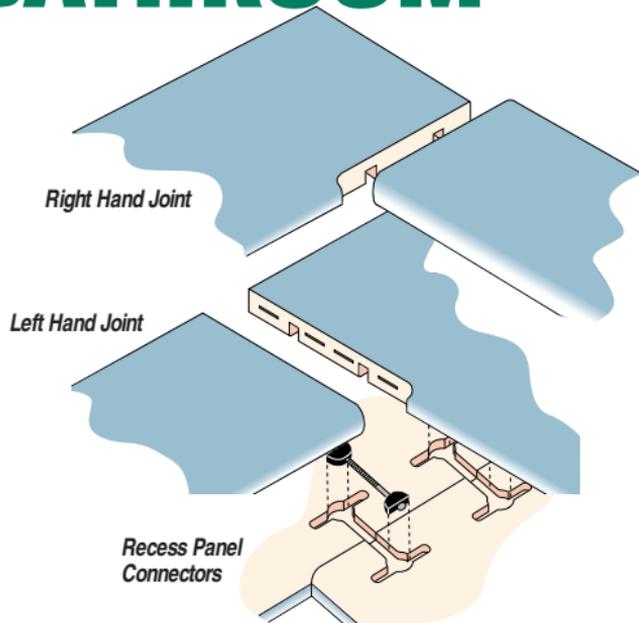
## 3.1 JOINING KITCHEN WORKTOPS



The joint between worktops that meet has often been made by fitting a surface mounted joining strip. These are both unhygienic and unsightly.

Postform jigs can be hired or purchased to produce a near invisible joint within 15 minutes.

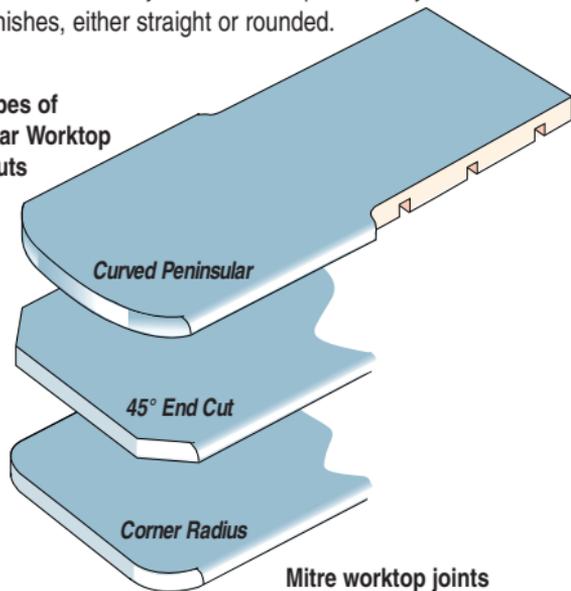
The main use of the jig is to produce the butt and scribe which consists of a male and female routed edge which will perfectly match.



The underside is recessed to accept panel butt connectors which will hold the joint together tightly. Biscuit jointing is recommended for greater strength and alignment of the joint.

There are several applications for postform jigs, from cutting 90° joints, mitre corner joints for hobs, peninsular joints and corner finishes, either straight or rounded.

**Three types of Peninsular Worktop corner cuts**



**Mitre worktop joints for hob units**

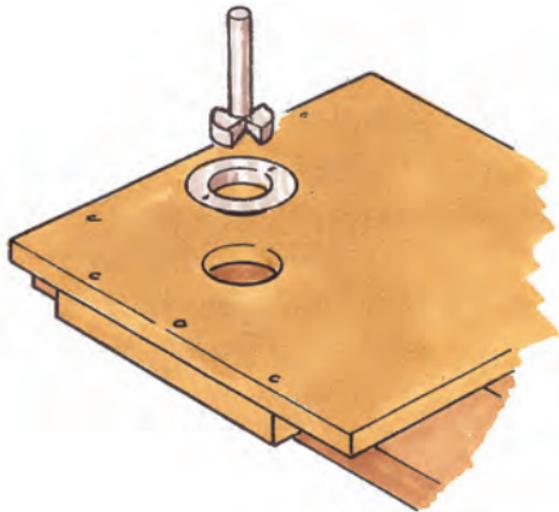


*The Trend COMBI 1001 workshop jig*

The jig consists of precision machined slots which guide the router. Bushes are positioned in various combinations of holes to align the jig on the worktop. The holes are colour coded for easy recognition.

The router is fitted with a 30mm guide bush and a 1/2" router cutter Ref. 3/83Dx1/2TC. The jig is held in place by either quick action clamps or optional clamping brackets.

## 3.2 CONCEALED HINGES FOR KITCHEN DOORS



The use of concealed hinges are the most popular way of securing unit doors. It is important that the hinge is located correctly into a pre-cut hole.

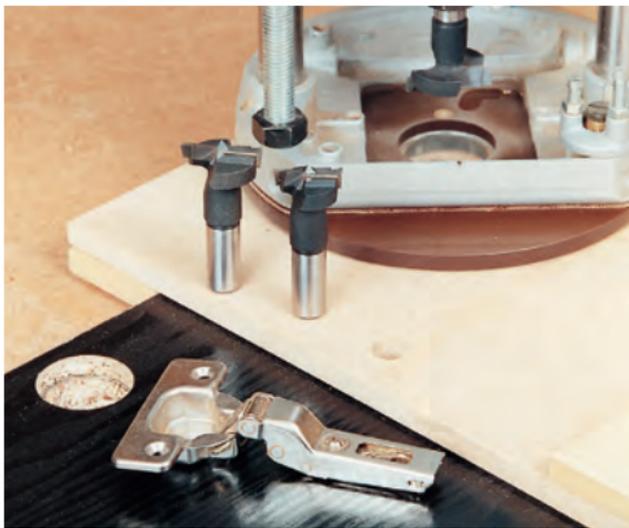
A drill stand and machine bit are the tools usually required. However, the router is also an ideal tool for producing neat accurate holes, using a machine bit designed for use with a



*Router Hinge Bit  
ref. 105/35X1/2TC*

router and a simple template to obtain accurate holes. Machine bits are available to suit popular diameters of concealed hinges.

The template is constructed from MDF with battens to position it on the door edge. The router is held in place by the guide bush located in the aperture on the jig.



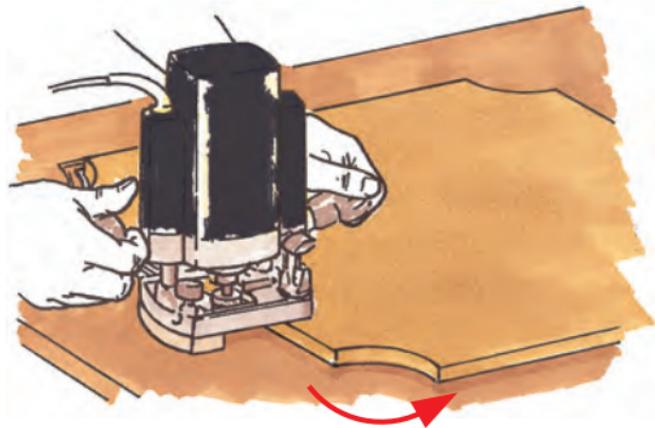
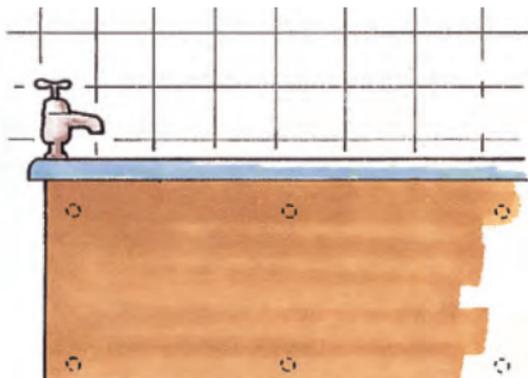
- 1.** The positions of the hinges are first marked on the doors.
- 2.** Set the depth gauge so that the hole will be routed to the exact required depth. The template is clamped to the door and the router is positioned.
- 3.** Rout each of the holes with a gentle downward pressure.

## SNAPPY® *Drill Bit Guides*



The Trend Snappy quick release drill system includes drill bit guides for quick drilling of fittings for hinges, drawer runners and other ironmongery pre-drilled with countersunk holes.

### 3.3 SOLID PANELLING

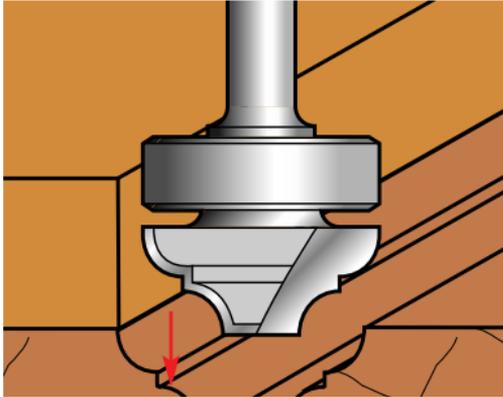


New bath panels can be made from natural timber or MDF boards and decorated to give a solid panelled effect.

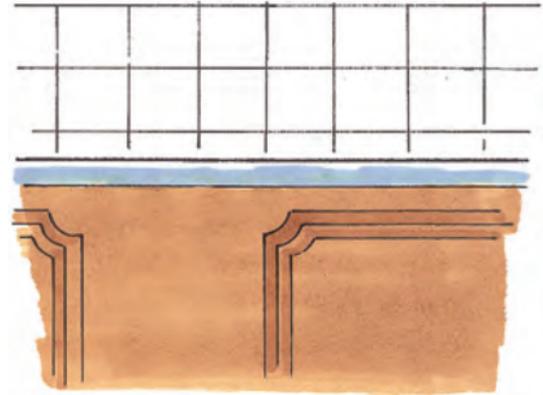
**1.** Cut new panels to size, allowing for any pipework and fixing locations.

**2.** Mark the new bath panel with location for the decorative work on the panel.

**3.** Design a template to the shape of the panelling you require from MDF or plywood. To make the template use the router with a beam trammel to produce the arcs and batten guides for the straight edges. Ensure that the template is accurate and free from blemishes as they will be replicated in the final workpiece.



*Panel cutter ref.  
18/53X1/4TC*

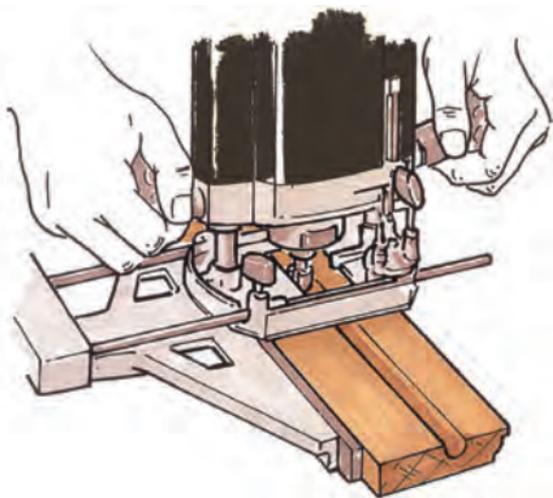


**4.** Use clamps or double-sided tape to hold the template to the workpiece in the first position required. Fit a bearing guided panel cutter Trend Ref. 18/53X1/4TC or similar and allow the bearing guide to follow the template. Alternatively use a standard panel cutter and fit a guide bush to the base of the router to guide it around the template.

**5.** Set the depth stop on the router to the depth required.

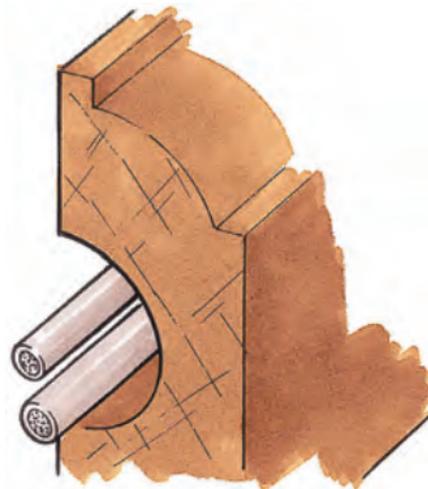
**6.** Rout in a number of passes following the template anti-clockwise. Repeat procedure for all panel positions. Fitting a false shoe to a section of the router base made from any flat material will help prevent it from tipping as you follow the template.

## 3.4 CONCEALING PIPEWORK AND CABLES

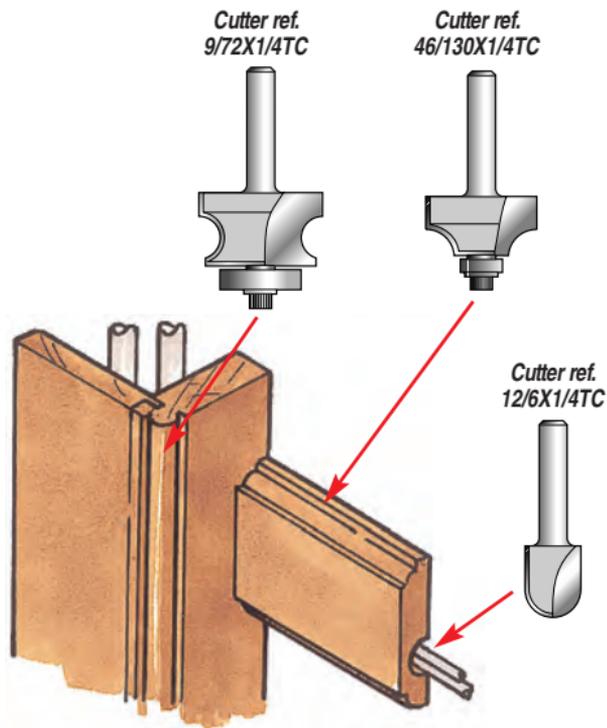


Pipework can be concealed behind panelling or recessed moulded skirtings.

**1.** Attach the side-fence to the router and fit a 1/2" (12.7mm) diameter radius cutter. Adjust the side-fence and depth of cut to suit. Rout the back of the material to a suitable depth. Take 2 or 3 passes if required.

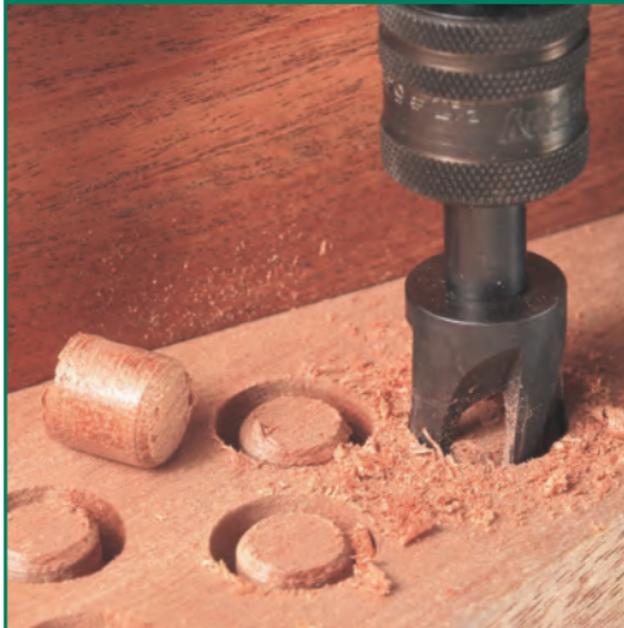


**2.** To decorate the edge of the panel use an ovolo cutter either portably or in a table router. Rout both edges. This method is ideal for hiding television and HI-FI cables around the room. It is not an advisable method for mains electricity cable unless suitably shielded.



- 3.** For pipework, a box section should be constructed, edges being decorated to suit.

## SNAPPY® PLUG CUTTERS



Snappy Hex Plug Cutters for cutting plugs in wood.  
Two sizes available to suit the Snappy range of Drill Countersinks.

## 3.5 INSPECTION HOLES IN FLOORING



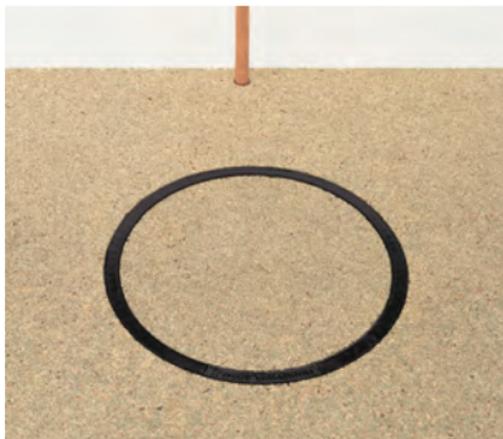
The Routabout system offers a unique solution found on site where access is required to pipes and electrical work beneath an 18mm or 22mm chipboard floor.

**1.** Screw the jig to the chipboard floor with a No.8 woodscrew at the position required.



**2.** The router is fitted with a 30mm guide bush and the special cutter supplied with the jig. This cutter is designed specifically to suit the insert ring that is fitted later. Insert the router into the jig and rout in a clockwise direction in a series of passes until the cutter finally bottoms on its depth stop.

**3.** The jig will prevent the waste piece dropping through the hole.



- 4.** Unscrew the jig from the waste piece. Insert a spacer ring (three are supplied with each jig) into the hole. Invert the waste piece and fit it into the insert ring.

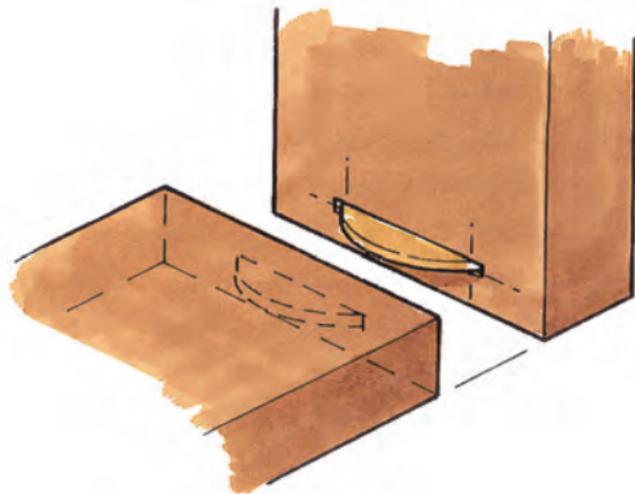
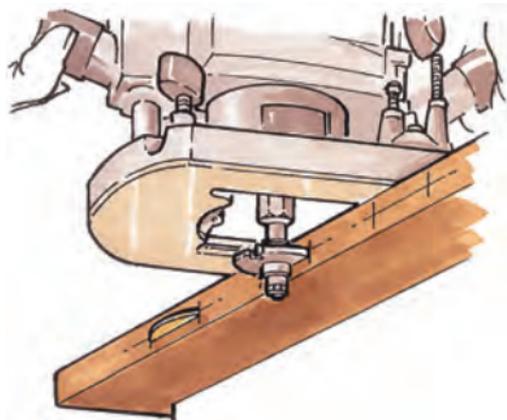
The access hole can then be left until required later by the electrician or the plumber.

## THE 3D BIT®

The effective drilling tool for electricians, plumbers and locksmiths. Ideal for installation and renovation work.

# 4 JOINERY

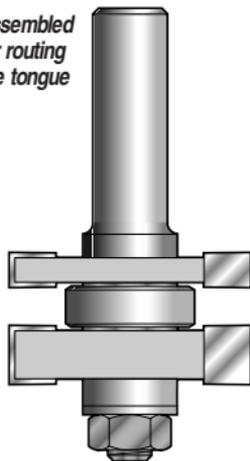
## 4.1 JOINING OF BOARDS



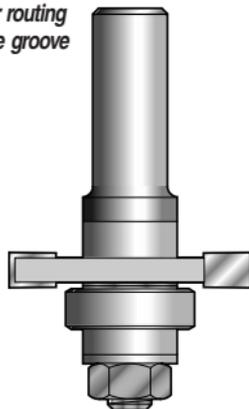
**1.** Biscuit jointing is fast and effective and is common practice with purpose made joinery. An alternative to a specialised biscuit jointing machine is the 342X1/4 or 1/2 TC biscuit jointer set which can be used with all routers. The set is ideal for edge to edge jointing.

**2.** By inserting a biscuit, a normal butt joint becomes stronger and can be easily aligned. Biscuits are supplied in three sizes 0, 10 and 20. By fitting one of three bearings a slot can be accurately cut to suit the appropriate biscuit.

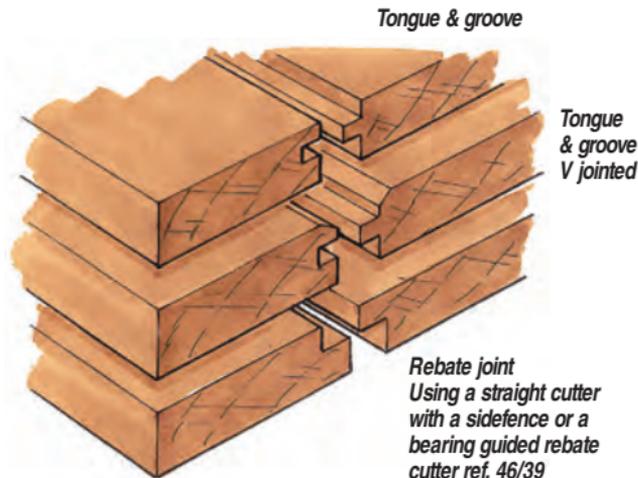
*Assembled  
for routing  
the tongue*



*Assembled  
for routing  
the groove*



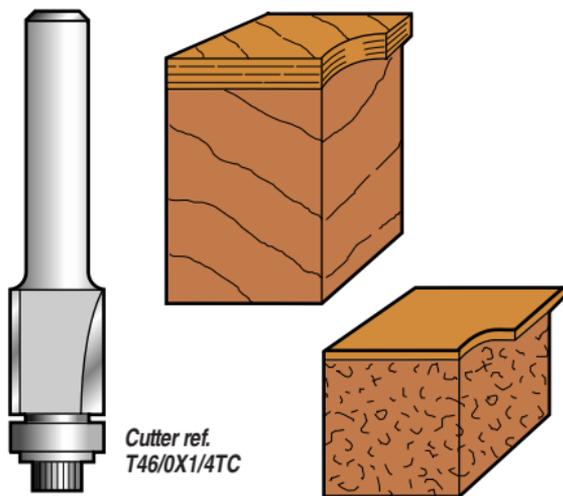
*Cutter set ref. 337X1/2TC is a  
one piece set with components  
rearranged on the arbor*



**3.** For a continuous tongue and groove joint, the Trend cutter Ref. 337x1/2TC provides an effective method of joining boards. A groove is machined on one edge and the tool is then re-set to machine a slot in the other edge.

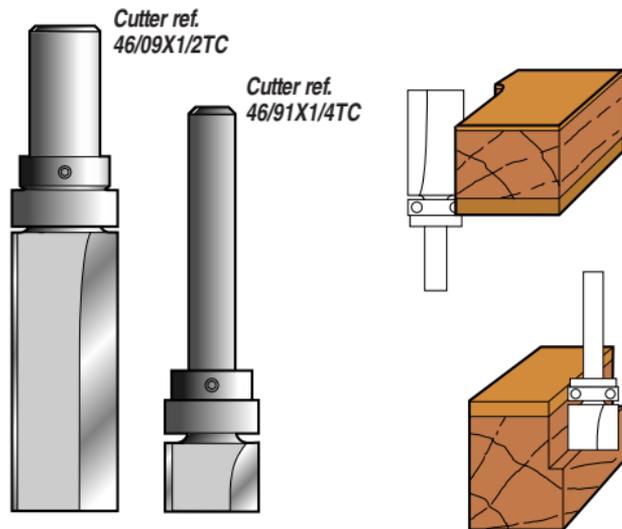
**4.** Upon completion of the joint, using a chamfer cutter, the boards can be routed to form a V jointed tongue and groove. Alternatively a purpose made matchlining cutter ref 337X1/2TC can be used.

## 4.2 TRIMMING AND EDGING



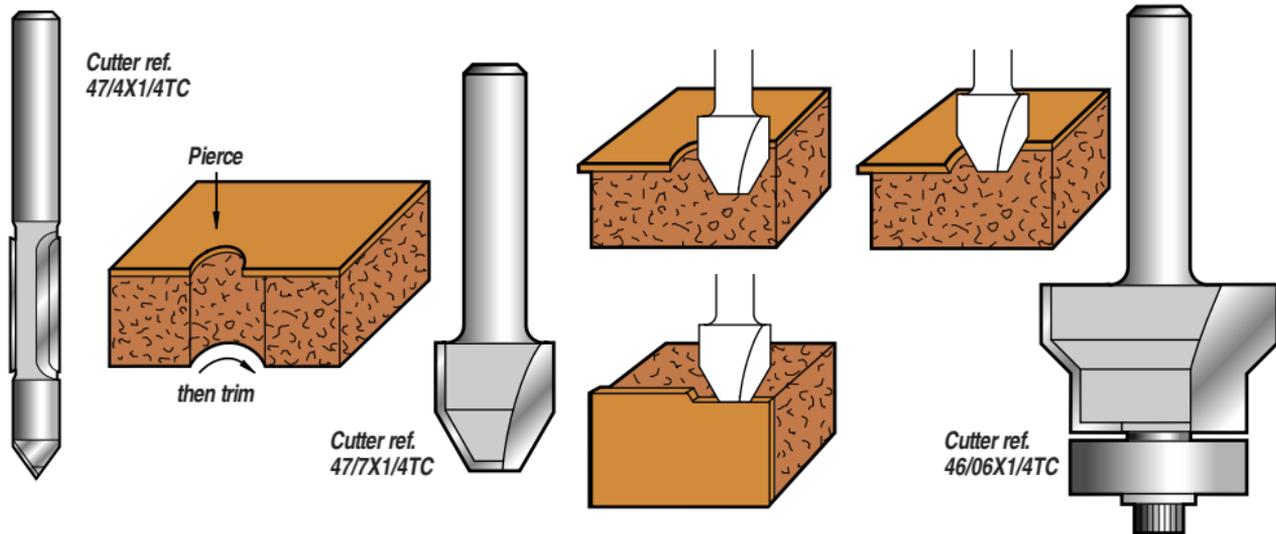
### 1. Trimming Cutters

Bearing guided trimmers can be used for trimming laminate or hardwood lippings flush with the workpiece. To achieve best results and to prolong the life of the cutter, no more than 3mm of overhang should be left to trim. They can also be used for shaping material to a template.



### 2. Profiling Cutters

Profiling cutters have bearings mounted on the shank and are used for trimming the workpiece from a template. This type of cutter is advantageous when following templates as the ratio is 1:1, eliminating calculations for the offset or margin when cutting a square edge.



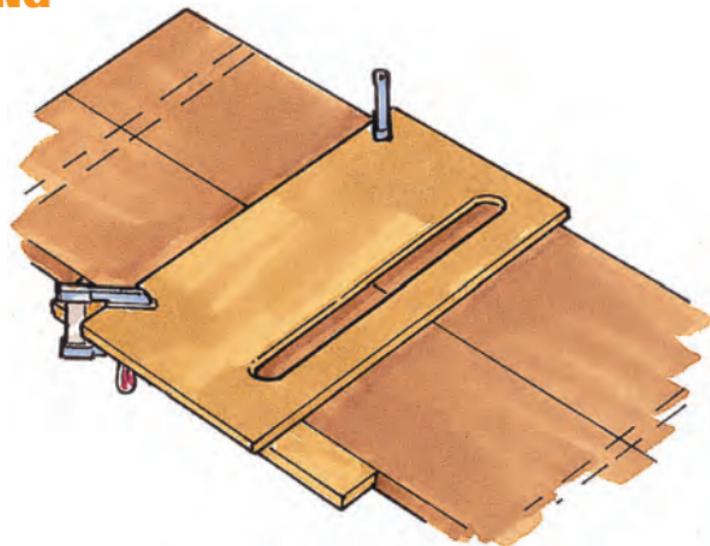
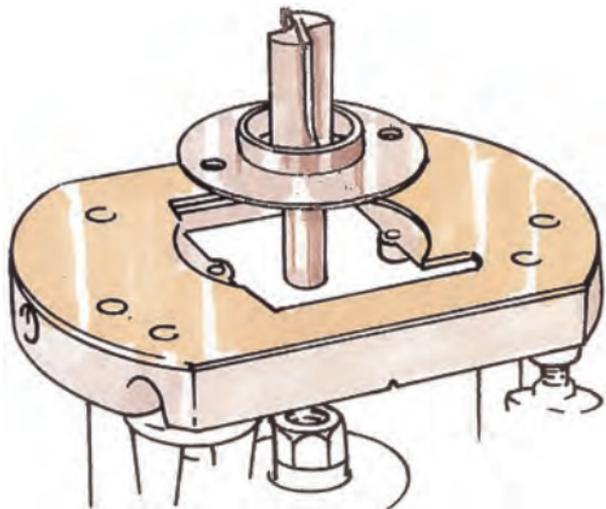
### 3. Pierce and Trim

These cutters pierce the laminate before trimming around the aperture. They are ideal when laminating carcassing or worktops after construction. The base of the cutter acts as a guide allowing the cutter to follow intricate shapes. Double trimmers can cut top and bottom laminates simultaneously.

### 4. Combination Trimmers

Combination trimmers have multi-purpose trimming applications, including bevel trimming, surface trimming and lip trimming. A side-fence is used with this type of cutter to ensure accuracy. Bearing guided cutters, are quick and easy to set up and are designed for edge trimming, especially curved edges.

## 4.3 STOPPED GROOVE OR HOUSING

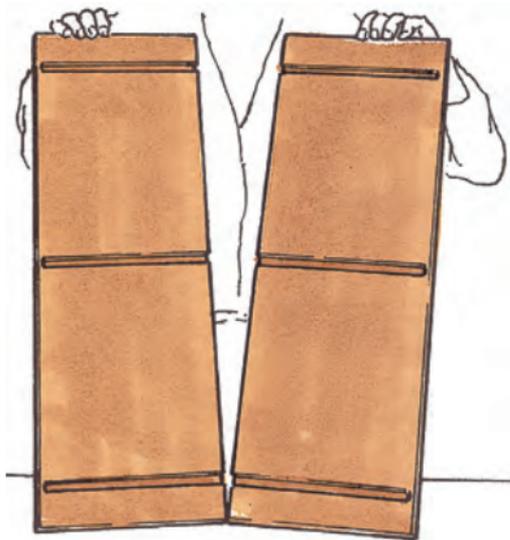


For shelf construction, rather than using unsightly fixing blocks, locate the shelf ends in the supports with stopped housing joints.

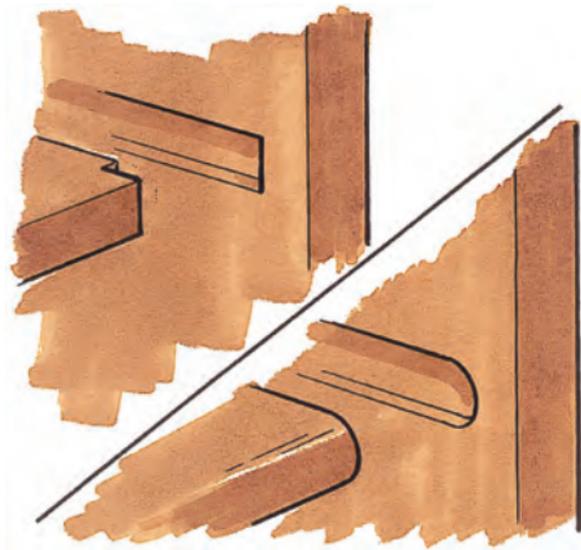
**1.** Select a cutter to match the thickness of shelf and a suitable guide bush ensuring adequate clearance.

**2.** Construct a housing jig should a quantity of shelves require routing. This consists of a slotted section of MDF. The guide bush runs in the slot which is set to allow for the stopped groove housing.

A batten is fixed at 90 degrees to the underside of the jig to ensure it is positioned correctly and securely.



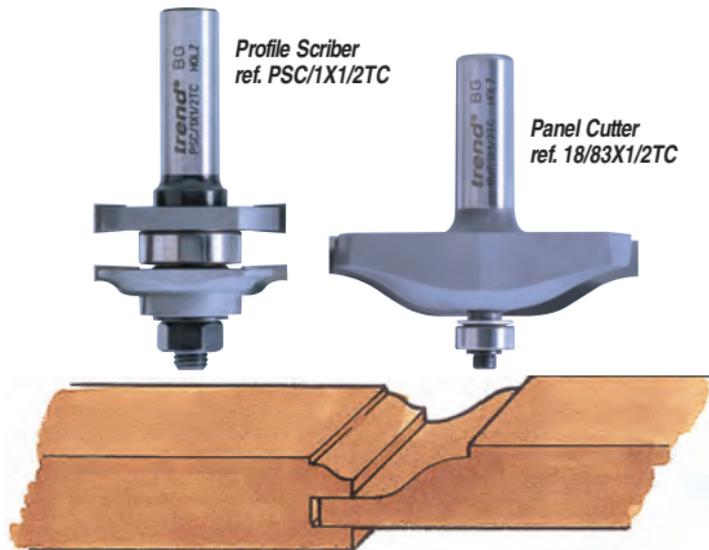
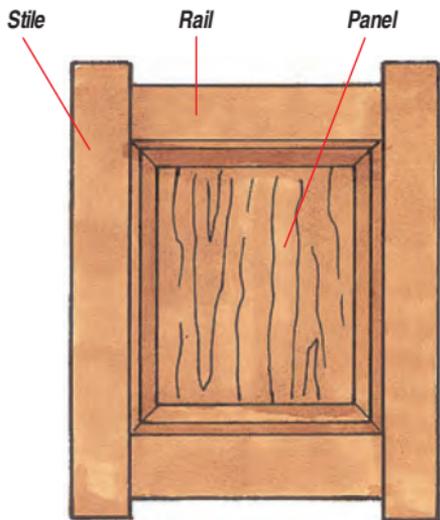
**3.** Lay supports side by side with both the front edges facing out. Position the template and rout the slot in two passes. Re-position for the remaining shelves.



**4.** After routing the housing groove, a radius will be left. By using a rounding over cutter, the shelf can be adapted to the radius, leaving a nosing.

Alternatively a notch can be cut out of the shelf to bring it flush to the front.

## 4.4 CONSTRUCTION OF RAISED PANEL DOORS

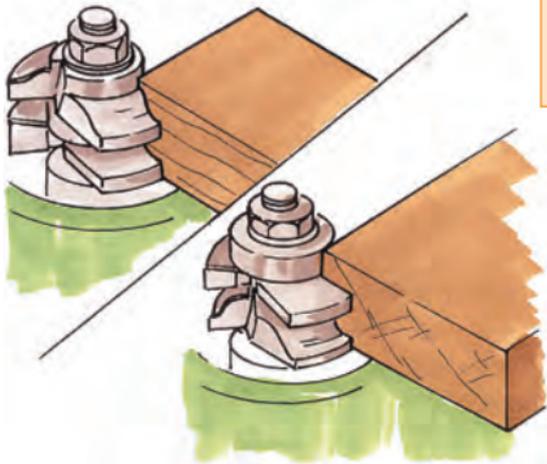


**1.** Traditionally, panelled doors involved complex mortise and tenon joints. The router mounted in the table and used in conjunction with a profile and scriber set, now produce an equivalent joint with greater ease. There are several profiles available with raised panel cutters to match.

**2.** As the name implies the 'profile and scriber' cutter performs both operations by re-arranging the block, groover and bearing.

Raised panels can be made from solid wood or MDF and shaped by panel cutters, again mounted in a table.

*Scribing the ends*

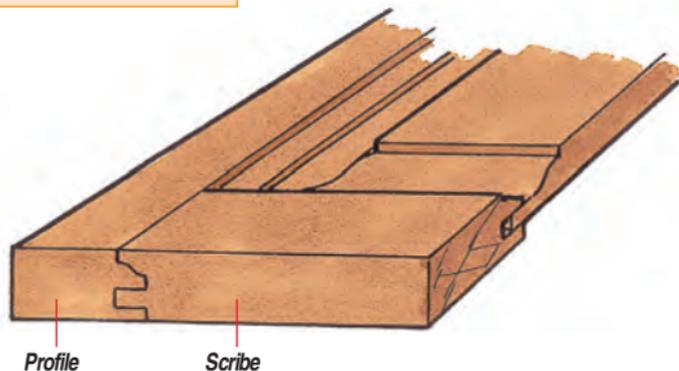


*Profiling the inside edges*

**3.** The scribing of the rail is cut first with the face side uppermost. The bearing regulates the depth. With all the scribes cut, re-arrange the cutter to profile all the components face side to the table.

## IMPORTANT

Staggering the cutting faces reduces impact and will improve the finish.

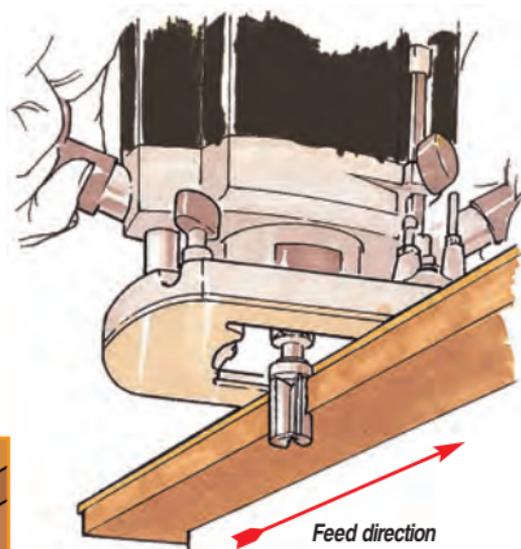
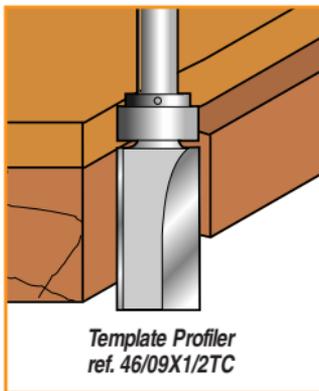


**4.** When machined, the panel locates into the groove. Several passes with the panel cutter will be required to obtain the correct depth. Dry assemble all components to ensure a tight fit. Glue joints and cramp up. The panel is left unglued to allow movement over time.

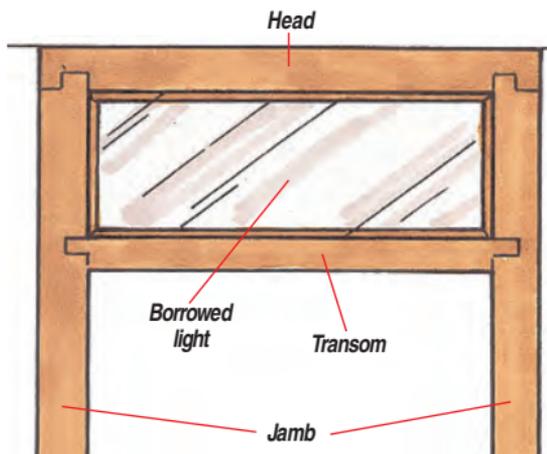
## 4.5 STRAIGHTENING EDGES

A useful application for bearing guided profilers is for straightening the edges of boards.

1. By using a straight edge or chalk line, mark a straight line. If the width of waste is more than 3mm, remove excess material with a jigsaw.
2. Clamp a wide straight edged batten against your marked line.
3. Fit a template profiling cutter which has capacity to trim the thickness of the material.
4. Adjust the depth of the cutter so that the bearing runs along the batten guide.
5. Always retract the cutter by releasing the plunge lock on the router when you have finished.



## 4.6 JOINT HOUSING



Barefaced and through housings are all easily machined with the router. They are often used in door lining construction for the head or transom of a lining.

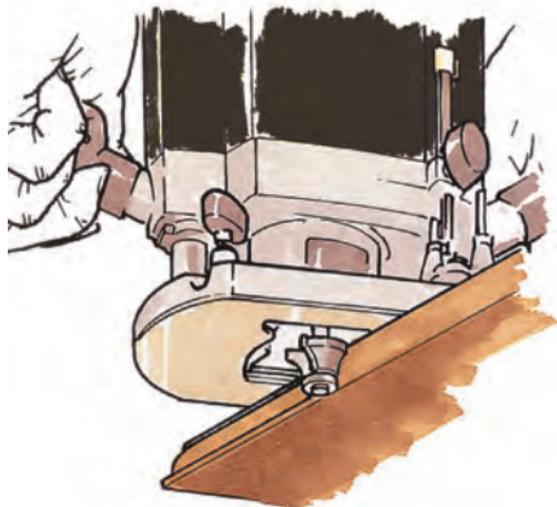
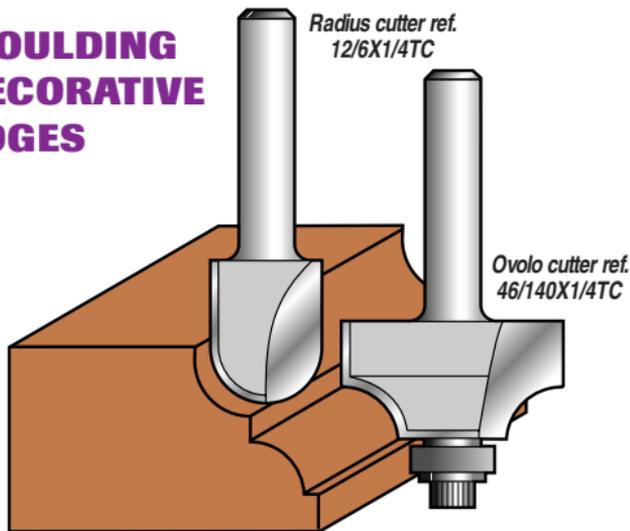
1. Lay the sections side by side and mark the position for the groove. Score with a knife to prevent feathering.
2. Fit a straight cutter Ref. 3/80X1/4TC.



3. Loosely fit a Clamp Guide, adjust door jambs ensuring marked grooves run parallel to each other.
4. Tighten the clamping mechanism and rout a groove 1/2" (12.7mm) deep in two passes.
5. Rout the transom with a similar procedure, adjusting the Clamp Guide at either end to cut the tongue.

# 5 DECORATIVE MOULDINGS

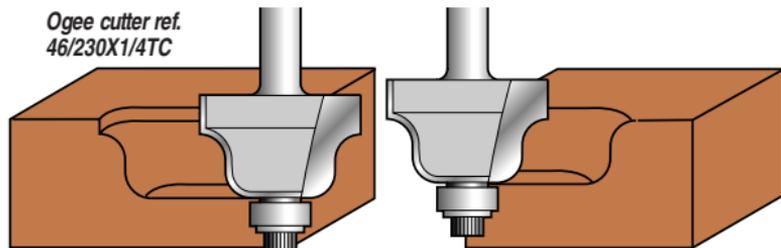
## 5.1 MOULDING DECORATIVE EDGES



Applying a decorative mould to enhance the edge of a book case or vanity unit is a straight-forward operation. One can either use standard shaped panel cutters such as cove, chamfer or rounding over with a side-fence for guidance, or with self-guided cutters.

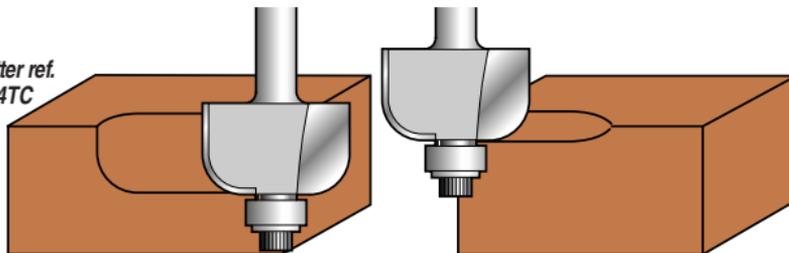
With these, setting up is kept to a minimum as they follow the board edge. They are ideal for moulding curved workpieces. By adjusting the height of the cutter or by fitting alternative bearings, different moulds can be created.

Stopped mouldings are elegant, effective and highlight the true shape of the cutter used.



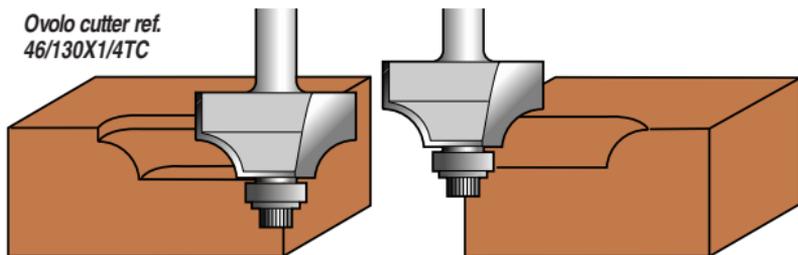
By reducing the depth of the cutter the top step or quirk is removed giving a softer appearance.

*Coving cutter ref. 46/260X1/4TC*



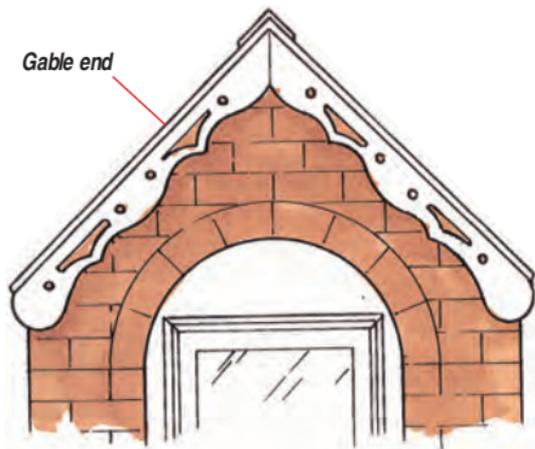
Here reducing the depth of cut, a less pronounced and symmetrical mould is formed.

*Ovolo cutter ref. 46/130X1/4TC*

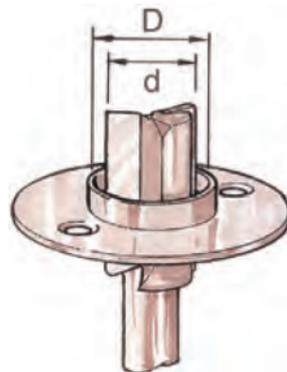


A larger bearing fitted to the cutter gives a rounded over effect without the steps of an ovolo mould.

## 5.2 ROUTING DECORATIVE BARGE BOARDS

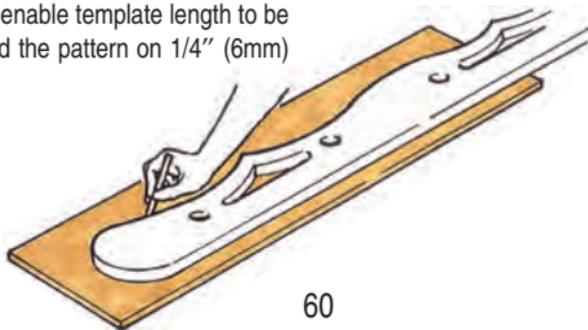


Replacing decorative timber barge boards requires repetitive machining of long boards to a set pattern. This therefore lends itself to routing operations using a template and a guide bush.



See page 135 for details on choice of cutter and guide bush.

- 1.** If possible, first remove the old bargeboard. The pattern should repeat, which will enable template length to be kept to a minimum. Trace around the pattern on 1/4" (6mm) plywood or MDF.

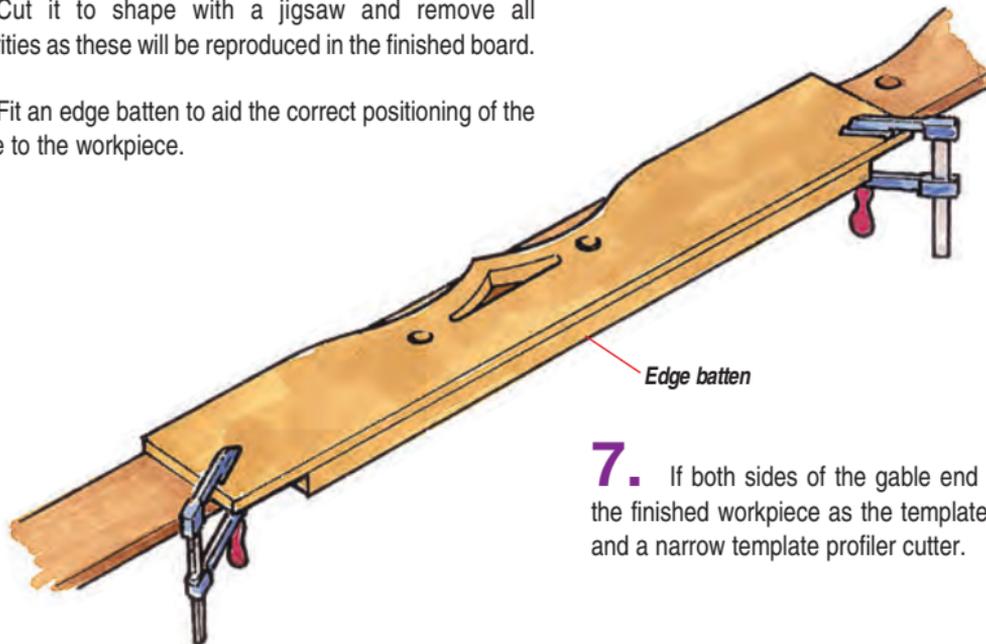


- 2.** Choose a cutter suitable for the thickness of the board and a guide bush that will give sufficient clearance around the cutter. If the pattern has a small internal radius choose a cutter and guide bush with a small diameter to match.

**3.** Calculate the offset between the cutter and guide bush and deduct this from the outside edge of the pattern. Add the offset to any internal part of the pattern.

**4.** Cut it to shape with a jigsaw and remove all irregularities as these will be reproduced in the finished board.

**5.** Fit an edge batten to aid the correct positioning of the template to the workpiece.

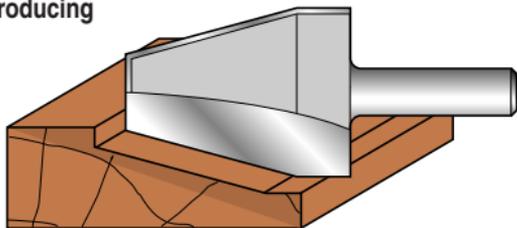


**6.** The routing operation consists of clamping the template to the workpiece, routing to the pattern and repositioning the template until the pattern is reproduced along the whole length.

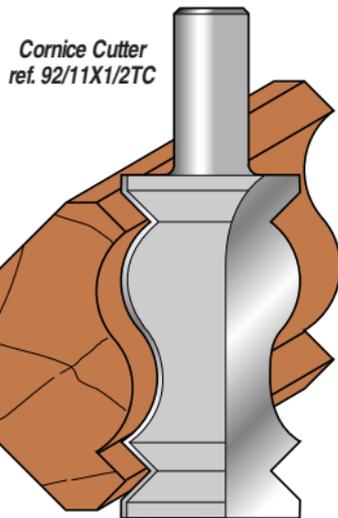
**7.** If both sides of the gable end require replacing, use the finished workpiece as the template for the second board and a narrow template profiler cutter.

## 5.3 SKIRTING, ARCHITRAVE AND DADO

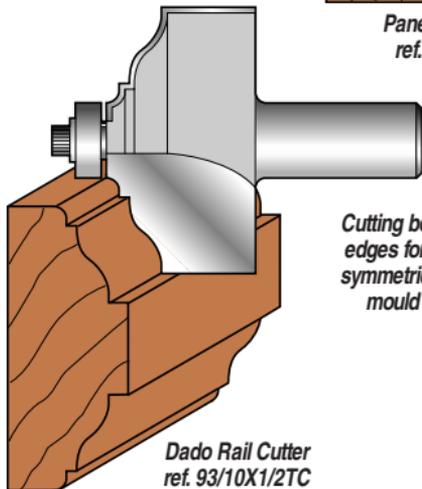
The router can be used for producing a whole range of decorative mouldings such as skirting, architraves and dado rails.



Panel Raising Cutter  
ref. 18X90X1/2TC

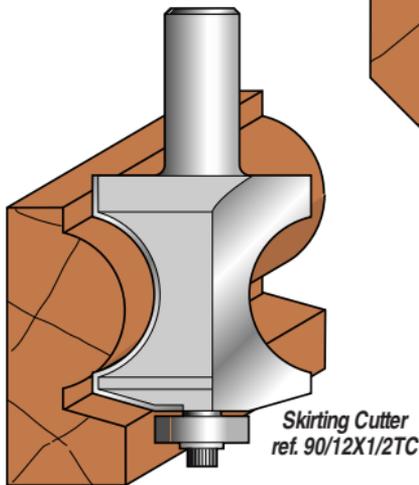


Cornice Cutter  
ref. 92/11X1/2TC

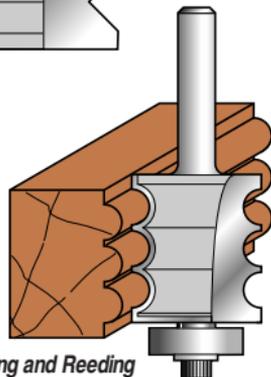


Dado Rail Cutter  
ref. 93/10X1/2TC

Cutting both  
edges for a  
symmetrical  
mould

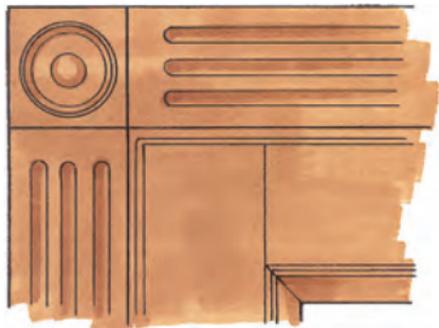


Skirting Cutter  
ref. 90/12X1/2TC



Beading and Reeding  
Cutter ref. 9/76X1/4TC

## 5.4 CORNER BLOCKS



*Rosette Drilling Tool  
ref. RDT/SET*

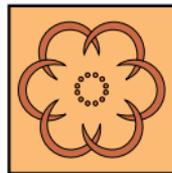
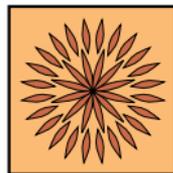
**1.** Corner blocks provide a decorative feature for fire surrounds or to complement fluted architrave around door and frames.

**2.** A specialised Trend drilling tool is available for use in a pillar drill. A wide choice of removable knives allow a variety of rosette patterns to be created.

**3.** Realistic carved rosettes can be



*Cutter ref.  
RCCX8MM or RCCX1/2TC*

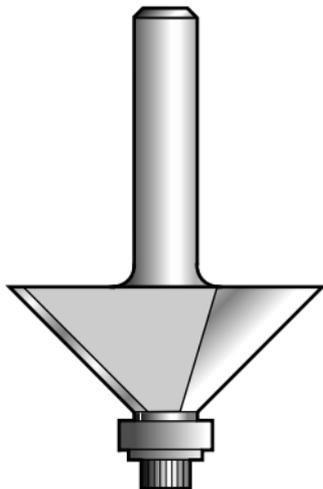


produced by using the Trend Router Carver system. This uses a unique template system in conjunction with a special guided cutter to give either a rose petal or sunflower style.

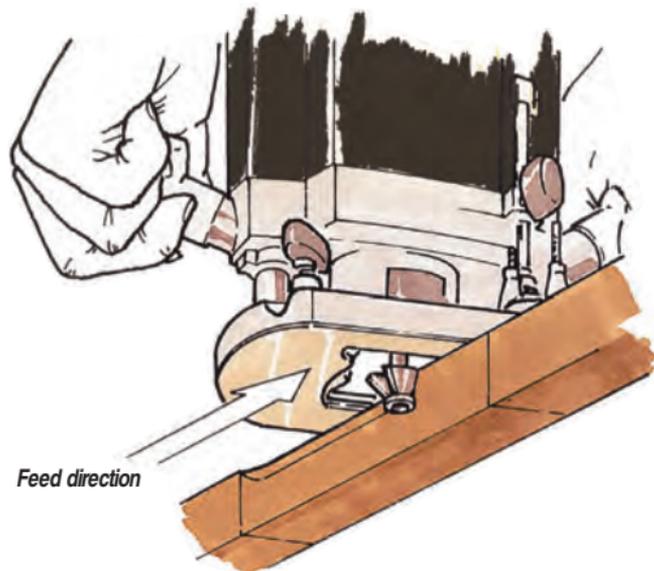
## 5.5 FLUTING AND CHAMFERING

### 5.51 Chamfering Edges

**1.** Decorative chamfered edges often found on newel posts are easy to achieve with a bearing guided chamfer cutter. One should first mark the length of the chamfer on to your workpiece.



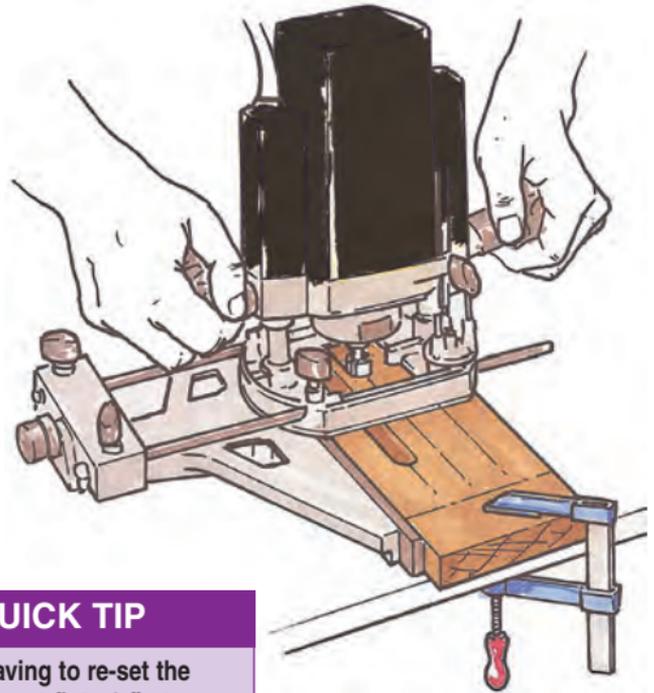
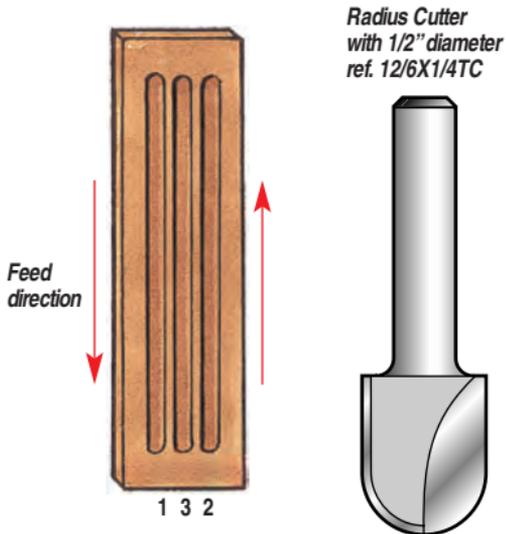
*Bearing Guided Chamfer Cutter  
ref. 46/37X1/4TC*



**2.** Chamfers can be routed freehand using the bearing or additional side-fence to guide the router. When routing using a bearing guide, care must be taken when entering and leaving the workpiece to prevent burning. A splayed finish will be left at either end.

## 5.52 Fluting

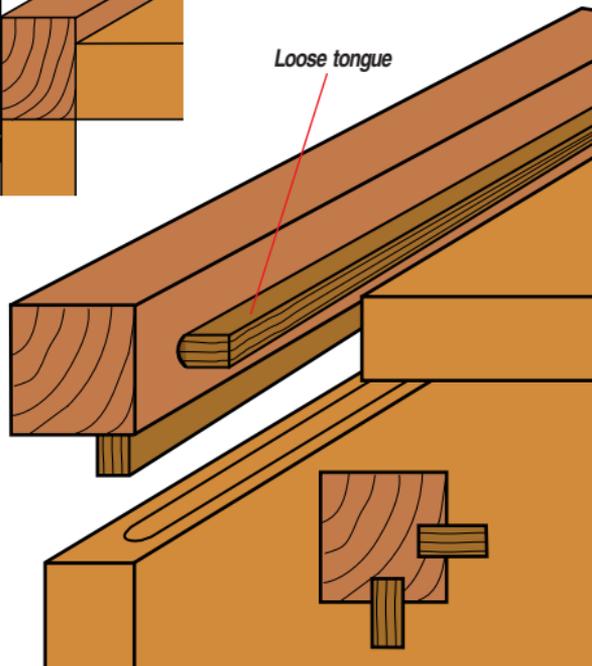
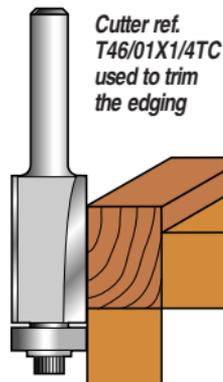
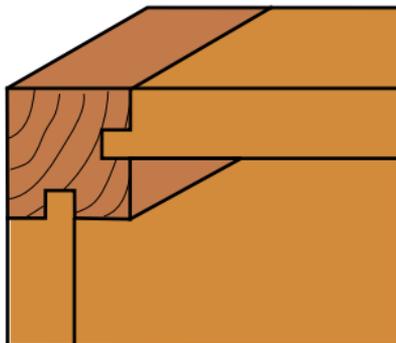
Mark the centre lines of the flutes onto the workpiece. One pass with the router will remove the waste and a second will give a superior finish. A batten clamped at the beginning and end will prevent overcutting.



### QUICK TIP

To avoid having to re-set the shoe fence, cut flute 1 first, switch sides to cut flute 2, then re-set to cut flute 3.

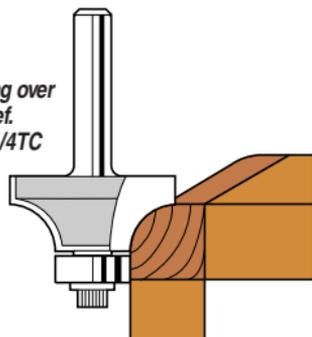
## 5.6 CORNER EDGING OR LIPPINGS



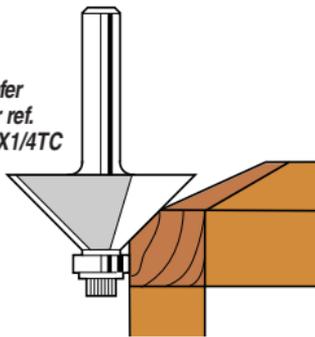
Hardwoods are often used for corner edging in carcass construction as they hide the core material of veneered boards. They also provide a robust edge which would otherwise be easily damaged. Hardwood edgings can be moulded using a variety of different cutters without the fear of exposing the core of a veneered board.

Often edgings are butt jointed but for improved strength barefaced tongue and groove joints can be used or loose tongues. These are easily constructed with straight cutters, or biscuit jointing cutter sets.

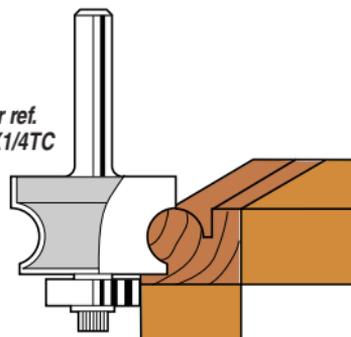
*Rounding over  
Cutter ref.  
46/93X1/4TC*



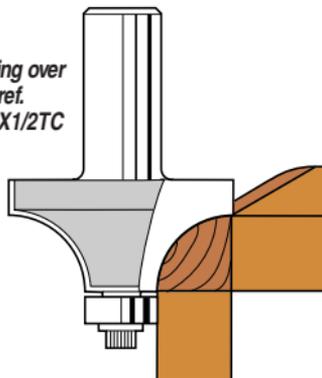
*Chamfer  
Cutter ref.  
46/37X1/4TC*



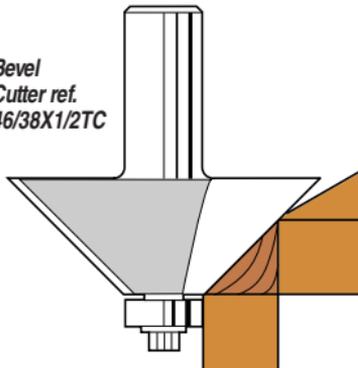
*Bead  
Cutter ref.  
9/72X1/4TC*



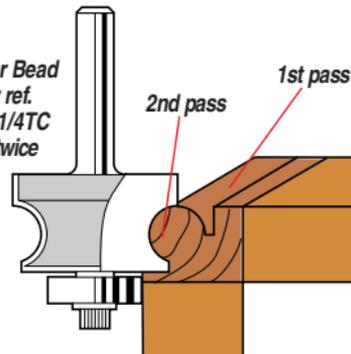
*Rounding over  
Cutter ref.  
46/150X1/2TC*



*Bevel  
Cutter ref.  
46/38X1/2TC*



*Corner Bead  
Cutter ref.  
9/72X1/4TC  
used twice*



Often the edging can be moulded with standard profile shaping cutters which are fitted with bearings.

## 5.7 TRADE RANGE CUTTERS



Quality Router Cutters featuring Micrograin Tungsten Carbide Tips for long life.

The cutters are Teflon® coated, indicated by a distinctive black colouring and can be used on hardwood, softwood, fibreboard, plywood and particle board. They have etched dimensions on extra long 40mm shanks, for quick identification.

[www.trend-uk.com](http://www.trend-uk.com)

Extra long shanks for greater reach

High quality steel body, precision turned on CNC machines

Multi-axis CNC precision ground cutting edges

Micrograin Tungsten Carbide tips 2mm thick, giving wear resistance & superior quality of cut



Precision ground & polished shank, for positive clamping in collet & minimum run out

Cutter dimensions on tool

Teflon® coated to reduce resin build-up

Two cutting edges for smooth finish

Trade Range cutters are supplied in tough plastic packaging to provide excellent protection.

