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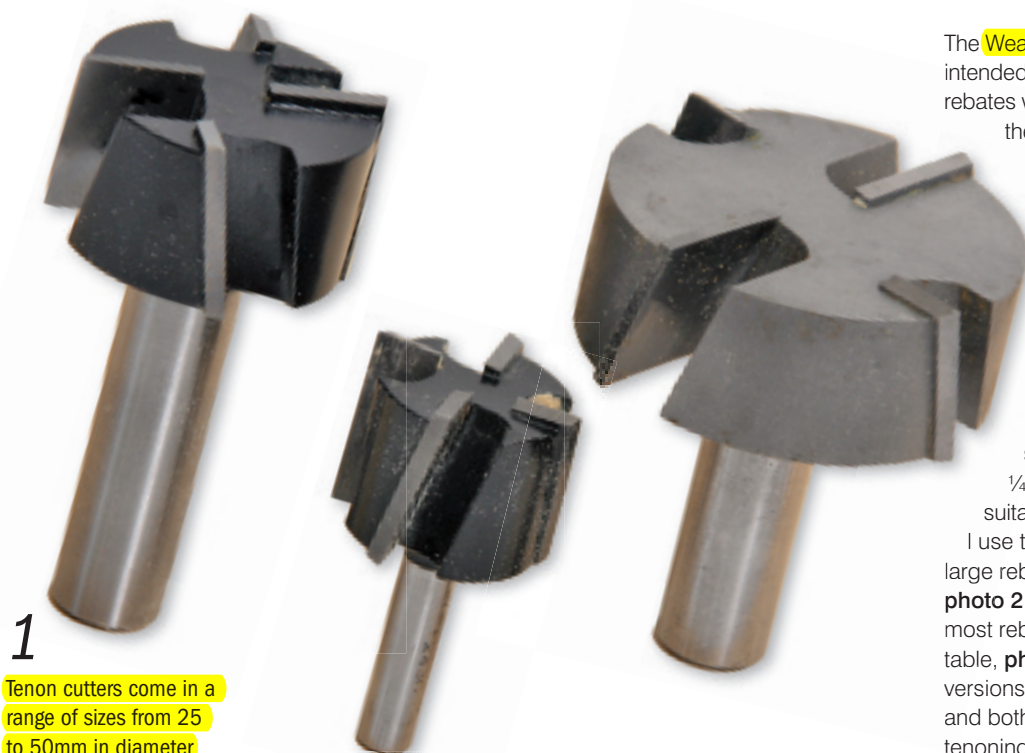


BY RON FOX

Beyond the basics 8: The final round-up

In this series I've described a number of cutter types which rarely feature in boxed sets but do a great deal to bring your router to life. To finish off, I want to look at five useful cutters which don't fall readily into any of the major categories

1: THE TENON CUTTER



The Wealden Tool Company offers a cutter intended mainly for cutting tenons and rebates which leaves a clean finish on both the shoulders and face of the cut. This is achieved by having four cutting edges, all with bottom cut. Two down-shear blades form the shoulders, and two up-shear blades form the faces.

The tenon cutter comes in five sizes. I have three of them, **photo 1**, the largest being 50mm in diameter on a 1/2in shank. This is strictly for table use at a reduced speed, but there are smaller ones on 1/4in and 8mm shanks which are suitable for hand-held use.

I use the larger one for cutting tenons and large rebates with a table-mounted router, **photo 2**. The medium size is excellent for most rebating, either by hand or in a router table, **photo 3**. Both the medium and small versions can be used in a hand-held router, and both find a lot of use in rebating and in tenoning with my home-made tenon jig.

1

Tenon cutters come in a range of sizes from 25 to 50mm in diameter

2: THE SURFACE TRIMMER

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The six-wing surface trimmer is 52mm in diameter on a ½in shank



Although the tenon cutter works well as a surface trimmer, especially on large surfaces, an even better finish can be obtained by using a specific surface trimmer, also from The **Wealden Tool Company**. This is a six-blade 52mm diameter cutter on a ½in shank, **photo 4**. It was introduced for trimming applications on



Run the router skis on a board at each side of the workpiece

the solid surface materials now common in kitchen design, but has proved to be excellent for thickening timber too.

To use it, you need a flat board to act as your surfacing table, a pair of runners or 'skis' to fit to the router side-fence rods, and a fine adjuster fitted to your router.

You can make the runners from lengths of batten, or buy a commercial set from Trend. The Trend ones are designed for use in relief carving, but are also applicable to thickening applications. They are made to fit the Trend T3, T5, T9, T10 and T11 routers. Therefore they also fit the many other models that have the same fence-rod diameter and spacing as the Trend models. They don't lift the router much above the workpiece, so I raise them with a board on

either side, **photo 5**.

The router should have a base aperture large enough to let the cutter through, for ease of adjustment, and a fine height adjuster for precise depth setting.

Using the skis

The piece to be thickened is held on the surfacing table with double-sided tape or hot-melt glue. The cutter is lowered to just skim the workpiece and a shallow initial cut is taken, followed by more shallow cuts until the board is at the desired thickness. With a rough-cut board, one side is smoothed; then the board is turned over for the other surface to be thickened.

Cuts are made in the 'wrong' direction – clockwise around the workpiece – to give the best possible finish. Because the cut is very light, there will be no trouble in controlling it in the wrong direction.

...and another thing

With their bottom cut, these cutters are also very useful for surface trimming on large areas – levelling a glued-up tabletop, for example. This is one of the lesser-known router applications, but is an extremely useful one. I also use it for preparing small pieces of hardwood left over from a larger

project to a common thickness for making little ornamental boxes. Small pieces tend to be awkward (or impossible) to put through the planer, but the router – with a suitable board to act as a surfacing table and a set of 'skis' for the router to run on – makes it an easy if time-consuming job. See the next section for more details.

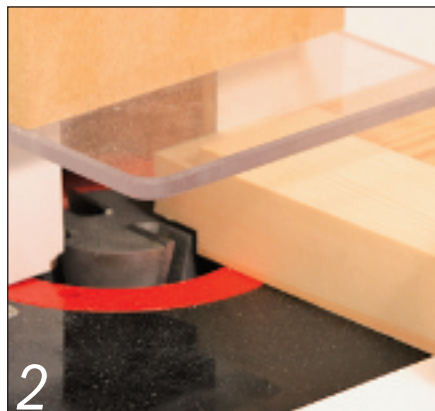
Cutting small workpieces

If you have several small pieces, they can be placed on the table together. The thickest piece is identified and the cutter lowered to make a light skimming cut. The router is then taken to the other pieces. When it no longer removes any material, the depth is increased very slightly and the process continued.

When all the top surfaces are trued, the pieces can be turned over and the process repeated to give a set of planed boards of exactly the required thickness.

Bench restoration

This particular technique can also be used to restore a battered workbench top. However, I would use the tenon cutter rather than the six-wing surface trimmer, as it has a heavier cut. Two runners are attached to the outer lengths of the benchtop and a 'bridge' carrying the router is placed across them. Skimming the benchtop will remove stains and gouges in the surface, and will give it a new lease of life.



The largest cutter is ideal for cutting wide tenons and large rebates



The smaller cutters can be used in the table or in a hand-held router



3: CHAMFER / BEVEL CUTTERS



6

V-grooving cutters may be plain or bearing-guided



7

Use a push block to take the work past the cutter

Most cutter suppliers offer a range of cutters for V-grooving, chamfering and bevelling, **photo 6**. These two-flute cutters come in a range of sizes from 9.5mm x 1/4in upwards with different tip angles, some plain and others bearing-guided. The type I use most is the 45° version. Apart from its intended uses, it provides a very good method of making mitre joints for small boxes, drawers and the like.

Boards can be mitred with the router



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Mount the workpiece vertically if using a Woodrat

hand-held against a straightedge, but it's more efficient to do the job on the router table or, better still, in the WoodRat where the cuts can be made in the reverse direction.

If the cutter is bearing-guided, remove the bearing because you'll be using the central part of the blade. Use your mitre fence or a right-angle push block to steer the workpiece past the cutter, **photo 7**. Take light passes, setting the fence back a little at a time until you've completed the first cut.



You can then put stop blocks behind the table fence to fix the final pass for subsequent mitres. You can also take the workpiece vertically past the cutter provided you have a substantial table fence against which to run it.

The WoodRat makes very easy work of mitring board ends. If you have the alloy rails, mount them, put a length of fence rod in the rear router holes, and put the alloy stop at the back of the rail.

Install the cutter and mount a test piece of board vertically in the cutting clamp, **photo 8**. With light passes, wind it past the cutter from left to right – that is, in the reverse direction of cut. When the test cut is successfully completed, bring the stop on the rail up to the fence rod to fix the final position of your mitre cuts.

Both these methods create excellent mitres in thin to medium thickness boards, but to get perfectly fitting corners it is essential that your boards are flat and their ends are at exact right angles.

5: ROUTER DRILLS



12

The range of sizes available is relatively limited at present

The router makes a first-class drill. It guarantees 90° entry and has a good depth setting system. I've done a fair amount of drilling with ordinary straight cutters and, more recently, with upcut spirals. The job is made easier, however, with the advent of a range of **TCT lip and spur dowel bits** made to run in a speed range of 1,500-24,000rpm, **photo 12**. Such high-speed drilling ensures clean-cut holes in all timbers and man-made boards. What's more they're mounted on 1/4in shanks, unlike ordinary drill bits where the shank is the same as the cutting diameter.

4: THE KEYHOLE CUTTER

This is my favourite one-function cutter, **photo 9**. It's a single-flute cutter that forms a keyhole-shaped recess in the back of picture frames, clocks, wall plaques and the like, allowing the item in question to be hung flush to the wall with no visible means of support.

Several sizes are available, cutting different diameter holes at different depths. The one I use is a Trend 35/0 with a major diameter of 9.5mm and a cutting depth of 6mm. The recess that it cuts fits over the head of a No 8 or No 10 roundhead screw. The **Wealden T1552 cutter** makes a larger hole, suitable for a No 12 screw.

Cutting keyhole slots is a guide bush application. You need a guide bush big enough to let the cutter through and a simple jig consisting of a piece of MDF with a slot cut in it to provide a snug fit for the

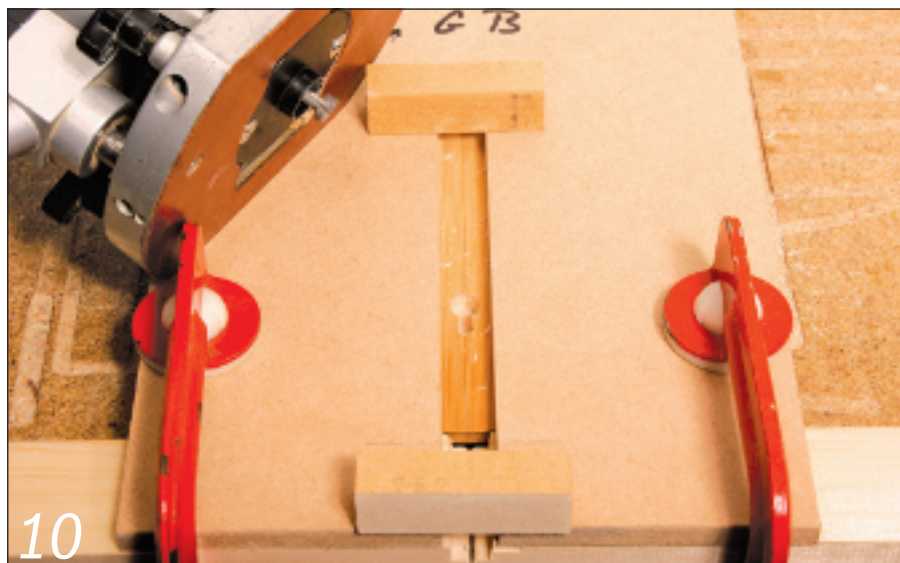
guide bush.

The jig is clamped to the back of the plaque, and the length of cut (which is only about 12mm) is controlled by pencil marks or small blocks taped to the jig. The depth of cut is set to the specified value. Then the router is positioned at the beginning of the cut, switched on and plunged into the workpiece. It is then taken forward to the other block or pencil mark, returned to the starting point, and un-plunged to reveal the keyhole, **photo 10**. A common error at first is to release the plunge at the end of the forward stroke, which ruins the cut.

To hang the plaque, a roundhead screw is driven into the wall with the head left projecting by the depth of the cut. The plaque is then simply hung on the screw head, **photo 11**.



The keyhole cutter cuts holes for No 8, 10 or 12 roundhead screws



You need a guide bush and a simple slotted MDF jig to cut the holes



The keyhole fits over the head of the screw and drops down over it

The range is somewhat limited at present, with sizes ranging from 4.8mm to 12mm, but it will undoubtedly expand in the future. Apart from straightforward drill bits there are also drill/countersink, drill/counterbore, and drill/countersink/counterbore bits already available.

To use these drills efficiently, it pays to make an auxiliary drilling base of clear plastic for your router. If you scribe sight lines on the base at right angles to each other, **photo 13**, it's then easy to position the router with the false base running against a straightedge.



Use an auxiliary router base running against a straightedge



FURTHER INFORMATION

- Trend
- 0800 487363
- www.trend-uk.com
- Wealden Tool Company
- 0800 328 4183
- www.wealdentool.com