

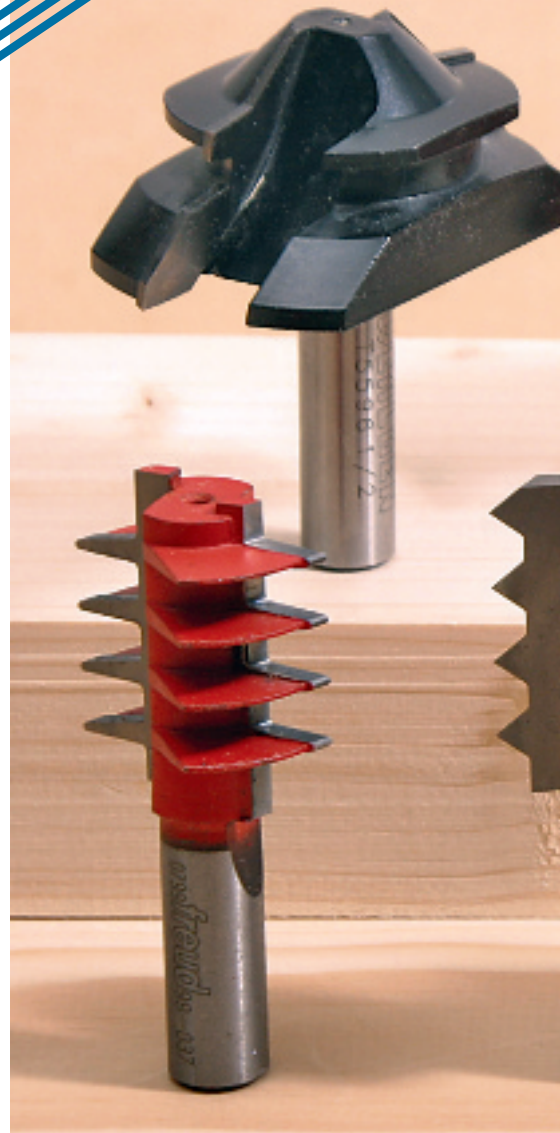


BY RON FOX

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Beyond the basics 4: Jointing cutters

Last month I showed how useful joints involving the use of biscuits, splines and tongues and grooves can be made with slotting cutters and their derivatives. This month I'm looking at some of the specific cutters designed for edge, corner, mitre and finger joints. As before, most of these cutters come on 1/2in shanks and require powerful variable-speed routers, usually mounted in a solid router table



Sand or scrub?

When this type of cutter is new, the fit of the joint is often very tight and the finished cuts usually need a light rub with fine abrasive to remove any feathering. An alternative, which I have found effective, is to scrub the edges with a stiff bristle brush, such as can be obtained from most general household stores, **photo 1**.

As the cutters wear, however, the fit becomes slacker, leaving more work for the glue to do. The suppliers recommend that you avoid having the cutters reground if possible because the removal of tungsten carbide from the blades loosens the fit of the joint. Careful honing is approved, when indicated, but regrinding is likely to shorten cutter life.

Losing width

With some of these cutters a little of the board edge is machined away and the face width is reduced slightly, unlike simple butt or biscuit joints. This slight loss of width has to be taken into account when deciding how many boards are required to make, say, a tabletop.

Finally, the glue line with these cutters zig-zags to a greater or lesser extent. It is a



1 Removing feathering from the edges of a joint with a stiff bristle brush

Edge-jointing cutters

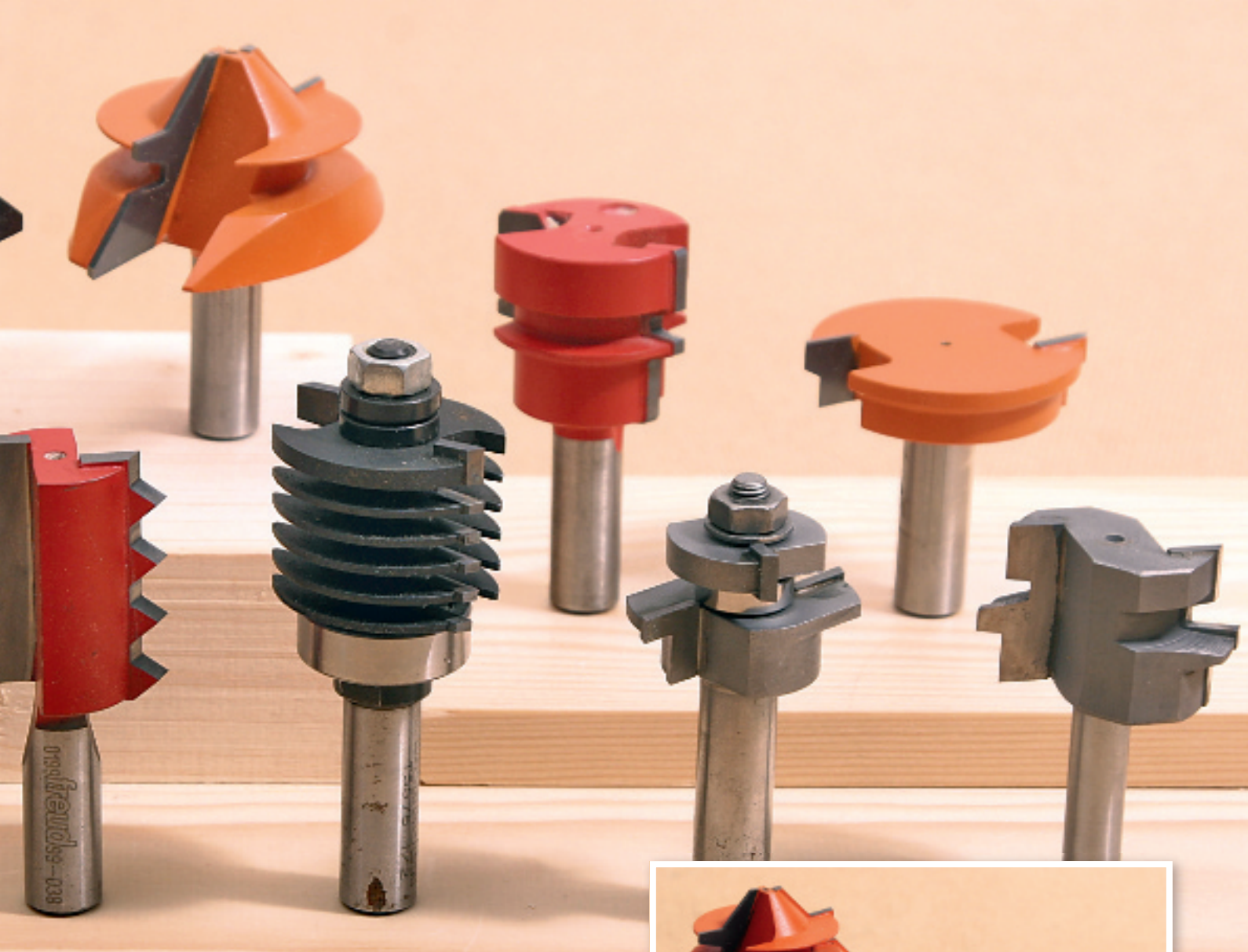
Joining a number of boards to make up wider panels for tabletops and the like is a frequent woodworking requirement. Nowadays it's a job usually done with a biscuit joiner, or with a 4mm slotter in a table-mounted router. However, a number of special edge-jointing cutters are available with names like 'reverse glue joint', 'finger joint', 'panel raising V-joint', 'offset tongue & groover' and the like. Their main feature is that they provide a tremendously strong joint by virtue of the larger glue area created, but they're quite expensive and require a bit more attention in setting up and using them. A fine adjuster on the router or table insert plate is a virtual necessity.



2 Four board joints, from left to right: CMT reverse glue joint, Freud raised panel V-jointer, Titman offset tongue-and-groove jointer and Wealden finger joint set



3 A 20 mm board being machined with the Wealden finger joint set



matter of personal preference as to whether a moulded edge based on a zig-zag joint looks better or worse than a moulded butt joint, but it is a detail that has to be taken into account.

Photo 2 shows joints made with four of the cutters in the lead picture. In each case the cutter used is standing on the boards, and the boards are staggered to show the shape of the glue line.

Reverse glue joint cutters

Some of these cutters can be used in a hand-held router, but they're much easier to use in a table-mounted one. Boards are prepared to a uniform thickness, the cutter is centred in the thickness of the board, and adjoining edges are machined one face up, the other face down – hence the term 'reverse' glue joint. The fiddly bit is setting the cutter in the exact centre of the board. One or two test cuts are usually required.

Now let's take a look at some individual brand-name cutters and see what each one can do.

Freud raised-panel V-jointer

This cutter is used for jointing boards up to 40mm thick and is aimed specifically at the

panel maker. The makers claim that it produces a strong joint without leaving any visible dark glue lines.

A further benefit is that the cutter doesn't have to be centred in the board thickness. After routing one edge of each board, the cutter is raised or lowered by 2.5mm to rout the mating edges. An easy way to make the transition is to set the initial cutter height against the router's stop bar, and to reset the bar for the mating cuts by using the shank of a 2.5mm diameter twist drill as a feeler gauge.

Titman offset tongue-and-groover

This is a bearing-guided cutter designed to achieve an improved tongued-and-grooved joint in flooring and panelling up to 24mm thick. It provides an increased length of glue line, staggered to give extra strength. Like

the reverse glue joint cutter, height of cut is critical and mating boards are cut alternate ways up.

Wealden finger joint set

This consists of an arbor on which are mounted a number of two-wing finger cutters plus a wider base (abutting) cutter and a bearing. A maximum of five fingers (which are supplied as standard) can be mounted to cut timber or man-made boards between 11 and 36mm thick.

The cutter is assembled with the



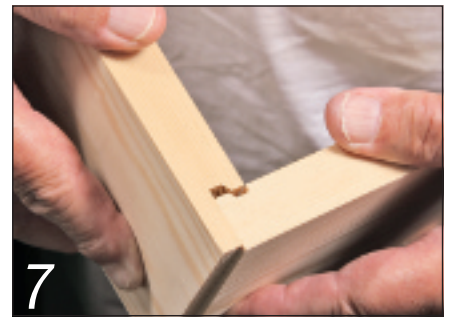
Three corner jointing cutters – CMT and Wealden lock mitre cutters, and the CMT drawer lock cutter (right)



5 The drawer front is machined flat on the table with its inside face down...



6 ...and the drawer side is machined in the vertical position with its inside face towards the fence

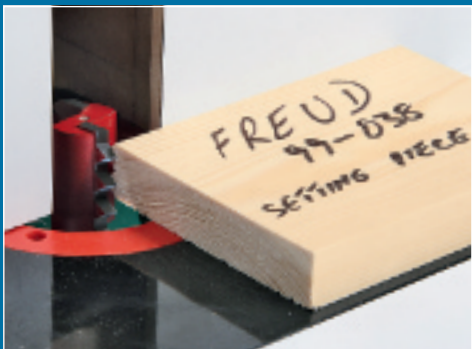


7 The two parts of the drawer box are ready to go together; note the large gluing area



SIMPLE SAMPLE SETTERS

With all these jointing cutters, accurate setting of the cut is critical, usually requiring a few test cuts to get it exactly right. I recommend keeping labelled examples of your final (successful) test cuts to use as setting pieces the next time you use each cutter.



appropriate number of fingers and the abutting cutter. The latter enables a clean joint line to be cut on the face of the timber without any risk of feather edges from the tapered fingers.

The blades of the finger cutters are staggered on the arbor to spread the cutting load, and the height is set so that the outer cuts are equal. The bearing of the cutter is aligned with the table fence, **photo 3**.

This is a versatile jointing cutter, suitable for edge, corner, and end-to-end joints.

Corner jointing cutters

Several cutters are available for producing corner joints of great strength. The two best-known examples are the drawer lock cutter and the lock mitre cutter, **photo 4**.

The drawer lock cutter can make flush-sided drawer fronts and boxes, and also rebated drawer fronts to fit on the front of a carcass. It is one of the easiest corner



8 A vertical board is held in a jig for machining with the lock mitre cutter



9 The finished cut reveals the very large glue area which gives the joint its strength

joint cutters to use. The joint is cut with the drawer front flat on the router table with its inside face down, and with the drawer side vertical with its inside face towards the table fence, **photos 5 and 6**.

Note the use of a home-made right-angle push block in **photo 5**. I use this in preference to a mitre fence. Note also the auxiliary fence taped to the table fence in **photo 6**. This is made from 12mm MDF with an aperture cut in it to give bare clearance – 'zero clearance' – for the cutter. The zero-clearance aperture and the one-piece auxiliary fence give a much more stable cut as the vertical workpiece is passed across the cutter. The work is held to the fence and moved past the cutter using a safety push block.

The two halves of the joint go together in a semi-locking fashion – not as strong as a dovetail, but adequate for much drawer and box making, **photo 7**.

The lock mitre cutter

This is an interlocking cutter for corner or flat joints. It's used in general carcass work, and in particular for loudspeaker cabinet construction. It's not one of my favourites because it's quite difficult to set up and use.

The main problem is that you need some sort of holding device for the boards, particularly the vertical board, because its bottom is machined to a knife-edge and this tends to sink under its own weight as the

cut progresses.

I use a jig, designed by the late Roy Sutton, to hold the boards. Both vertical and horizontal cuts are made with the board held in the jig, **photo 8**. The finished cut is a complicated one with a very large glue area, which gives the joint its strength, **photo 9**.

This cutter can also be used for making very strong edge-joints by machining both boards flat on the table, reversing the boards as with a glue-joint cutter. If you have bought one for making corner joints, you might as well try it for edge joints as well, but I wouldn't advise anyone to buy this cutter solely as an edge-joint cutter. Apart from its cost, it is a cutter that suppliers, including Trend, advise cannot be re-sharpened.

FURTHER INFORMATION

- Freud
- 0870 770 4275
- www.freudtooling.co.uk
- Titman
- 01255 220123
- www.titman.co.uk
- Trend
- 0800 487363
- www.trend-uk.com
- Wealden
- 0800 328 4183
- www.wealdentool.com