



Special router cutters

Want something a bit different but not sure where to start? We look at some of the more exotic cutters (read 'expensive'), with suggestions

So what are special cutters? Anything you wouldn't have in your standard set of cutters might be the easy answer. Expensive might be another answer, it is true that many unusual or seldom-required cutters do carry a bit of a price tag. But there you have a powerful machine underused or, more accurately, underexploited – you aren't getting the best out of it, perhaps? ►

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STRAIGHT CUTTERS

This is a very mixed bag once you stray from standard two flute straight cutters. They include types which you might think don't qualify as straight but I've lumped them together as they are straight in one aspect or another.



The stagger cutter comes in several different sizes, mostly 1/2in shank. It does a similar job to a pocket cutter but the single offset blades give more 'attack' and chippings clearance.



The pocket cutter has quite a small amount of carbide on the end and a long shank that is slightly smaller in diameter. This allows it to cut deep mortice pockets easily.



Some spiral form cutters can be used on wood mounted in freehand machines. They cut quickly and neatly without serious burning, which is the usual result with standard two flute cutters.



Lastly we have a straight cutter with reversal, disposable blades. It seems like quite an expense but relate it to all the straight cuts you have to do and it might make economic sense, especially as no one resharps router cutters these days.

Don't be fooled - the cutter on the left isn't for wood even though it is built in the same way as the right-hand wood cutter. It is intended for boards with a lightweight honeycomb core. Used on wood it could easily snap under pressure.



GLUE JOINT CUTTERS

This is a rag-bag selection of joints that interlock and glue together. You could include the remaining two categories but that would be to ignore the critical differences of these other types.



This cutter produces a simple step joint, one half is machined the right way up, the other is inverted and the two joints lock together with glue. All reversing glue joints need stock to be thickened exactly and test cuts are essential to avoid surface steps at each joint.



Here is a test cut showing how they will fit together. On the actual production run much depends on the boards being flat so the surfaces are not misaligned.



Two different cutters, the lock mitre on the left and a simple corner joint on the right. Both are suitable for drawer box joints but care has to be taken as one half of the joint will have very short grain fingers that can snap easily.



Here you can see the vulnerable short grain on the right-hand half. Once the drawer box is assembled this ceases to be a problem - it is the machining and joint dry assembly phase that can cause a breakage.



For one half of these respective joints they need a high fence and a pushblock. It is safer and gives good work support and accurate joints.



Although you won't need to make clip-together flooring as you can buy it ready made, it does show you how efficient this dry fitting joint really is.



If you want really unbreakable glue joints, such as for making kitchen worktops out of strips of hardwood, then this adjustable cutter set is ideal. It needs care in setting using up using shim washers to get precise finger spacing.



Test cuts are vital and the spacing of the fingers affects how well the glue compresses in the joint. The ends of the fingers need defluffing with abrasive so the joint will close properly.



Only a light amount of glue is needed, generally brushed on the tips of the fingers. As the joint closes the glue is pushed down into bottom of the opposing finger grooves. ➤

BISCUIT CUTTERS

The biscuit jointing machine is a very quick, efficient means of jointing with low component cost. However, if you already have a router it is relatively cheap to add a biscuit cutter set. More importantly it can work around awkward shapes which a biscuit jointer cannot do.



An easy way to fit slide-on shelves is to use a biscuit cutter in the end of the shelves to make stopped cuts. The biscuits can be fitted in the carcass sides after slotting with a 4mm diameter straight cutter in the router running against a straight edge.



This is a typical biscuit cutter set consisting of a three-wing groover and three different diameter bearings which correspond to the three standard biscuit sizes. Note the cutter diameter is much smaller than a biscuit jointer's own cutter, therefore there is a slight 'glue pocket' at each end of the slot.



This shows the slight nuisance of biscuit slotting with the router. You need two marks at least so you know how far the slot should run. The marks indicate the bearing edge, the slot extends beyond the lines.



The process can be made easier by taping on a clear false base with bearing marks so you can see when they line up with the marks on the wood. Never unplug of course, withdraw the router sideways carefully to avoid marring the slots.



Using a right-angle jig mounted in a vice you can machine carcass corner slots as shown here. Normally they could only be done with a biscuit jointer but this jig allows the router to machine the slots.



Slotting on a curve is no problem at all. Indeed, if you were to fit the exact matching internal piece, its own slot combined with the other slots would allow the biscuit to fit perfectly. So you could fit contrasting sections of wood in this way or a panel in a frame.



Biscuit jointing on the router table is also possible. Triton has its own system and different size biscuits but this setup is easy enough to use. You need 'start stop' marks on the fence and a press-on, pull-off technique. Be careful to feed in the correct direction to avoid kickback.



Biscuit joints in kitchen worktop edges avoid the sections floating up and down, instead they will stay perfectly level for ever.

FRAME AND PANEL CUTTERS

This is a class of cutters on their own, whether it is just the frame cutters used with a flat ply or MDF panel or glass or, alternatively, using a panel raiser as well for creating decorative wooden panels to fit in the frames.



This plain grooving set can be used for joining board or making plain door frames with a flat panel in the middle.



A typical two-cutter frame and panel set. The scribing or end cuts on the rails are done first using the left-hand cutter, then the stiles and rails both have the profile machined using the right-hand cutter.



Machining order is critical - the crosses indicate which way over the components are, ready for the scribing cut. Using the cutters in the last photo the best faces are underneath as the components have to be upside down.



A scribing cut is being made in a rail. This is a different cutter which has three cutter profiles on one arbor, so it can do both profile and scribe cuts by altering the height of the cutter.



A moulded frame can have a flat panel in the middle but more often will be a raised panel using a cutter like this. It is very big and expensive but gives good results and different moulding profiles are available. If a bearing is fitted it can mould arch top door panels.



Some panel raising cutters also feature a back cutter designed to ensure a clean, slightly raised rear profile and a constant tongue width so the panel fits nicely into the frame.



An alternative panel raiser is the vertical type, which is smaller and safer to use. They will fit in a small router if necessary and they come in several moulding profiles.



Two faults in one panel. First, a biscuit used to hold the panel together has been machining through so it is 'grinning' - careful placing of slots is important. Second, the vertical panel raiser didn't have a close fitting 'breakthrough' sub fence. The result is a lot of torn fibres.



Done correctly you should end up with something like this. ■