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Biscuit jointing with the router

Anthony Bailey proves the router really takes the biscuit

any woodworkers now use biscuit jointers, just like James Hatter when building his portable saw table unit. If you want to minimise your outlay and already own a router, or need to form biscuit joints in awkward locations, why not try using a biscuit jointing cutter set fitted to your router?

For anyone not familiar with biscuit jointing, it is normally done with a dedicated biscuit jointing machine. This creates a 4mm slot of a depth that can be easily changed to suit one of three standard sizes of 0, 10 and 20 biscuits. The speed and ease of jointing has to be seen to be believed - it also allows a degree of sideways adjustment which is useful. The biscuits are formed from compressed beechwood cut at an angle for maximum joint strength, and with a hatched grip pattern that holds the joint tight as the glue in the joint swells the biscuits. The biscuit jointer, with its flat front face and fence,

works well in most circumstances but if you already own a router then you can buy a biscuit jointer cutter set for as low as \$30.

There are other reasons to do biscuit jointing using the router. Since a standard jointer can only work on flat surfaces, any attempt to do the same thing on a shaped edge will fail as the blade may not even touch the surface, let alone make a slot. A typical example would be a postform kitchen worktop joint, held together by special worktop bolts fitted into routed recesses underneath. Biscuits are the perfect way to keep the two surfaces flush but the dogleg shape of the joint created, will prevent a jointer from doing the frontmost slot. Using a router and biscuit jointing cutter overcomes this problem.

3 The typical cutter set can be on any standard shank size but a ¹/₄in fitting is probably best, as you can use a small lightweight router. The cutter



The biscuit jointer versus the router... a more even contest than you might imagine



Only a router biscuit cutter will do for biscuits in tight corners



The cutter set with the different biscuit sizes and their respective bearings



Anthony has a set of templates to give the correct cutter plunge depth



Anthony also uses a registration stick to mark out the length of the biscuit cut

is either fixed or removable – in the latter type you must ensure the cutter is fitted the right way round for the motor rotation. There will be three bearings: the largest being for size '0', the next one for '10', and the smallest for '20' biscuits. An Allen screw and washer or nut are used to keep the bearing and cutter in place.

4 To set up your cutter, choose and fit the appropriate bearing and check the cutter can plunge through the machine base. Plunge to the correct depth with power off, which should normally be to half the thickness of the board to be jointed. You can verify this by doing a test cut.

5 Normally with a biscuit jointer, you would just place a strike mark across both boards to be joined and this would be the centre mark for the slot. However, this time, you need two



The cutter slides in sideways and you move the router along the correct width

outside marks where the slot should start and stop. You need to experiment to get a slot deep and wide enough – this will vary according to what biscuit size you are using. The best solution is to make a registration stick to suit each biscuit size and use it to mark out each biscuit position.

6 Make sure the depth rod is locked tight and the router plunged and also locked tight. Plug in and sit the router base on the workpiece just enough to support, but so the cutter cannot contact it. Switch on and slide the router into the job sideways and start to cut from the first mark, and stop at the second. Pull the router out sideways. DO NOT UNPLUNGE!

Machine the other half and do a dry fit with a biscuit to check for fit. Repeat for your other joints.



Here's a section through the different biscuit joints. The jointer (left) produces the best result, followed by the cutter set, and then the straight cutter (right)



A dry fit will check for flush faces and that the joint will close properly



To form T-joints, you will need to use a straight cutter with light cutting passes

Such a cutter set is fine for edgeto-edge joints, but cannot do T-joints such as shelves in a carcass where the cutter needs to be well away from the edge of the workpiece. In this case, you can use a 4mm straight cutter to make the slots using a guide rail, or T-square to guide the router. There is more strain on the cutter so do it in a couple of passes.

9 This cut through shows how a biscuit fits in each type of slot. From left to right: biscuit jointer, router biscuit cutter, and 4mm straight cutter. The last two leave bigger glue pockets and the last doesn't give a lot of strength, so ensure the glue has plenty of time to dry. Polyurethane (PU) glue has the advantage of gap filling but good clamping is required.

So there you are... biscuiting without a biscuit jointer!