

BAILEY'S ROUTER CLASS

Tea caddy



Anthony Bailey makes a lovely box for your favourite beverage



THE PROJECT

There are certain things that are quintessentially English, such as cricket on a Sunday afternoon, triangular cucumber sandwiches with the crusts cut off, and a cup of tea served on a saucer.

Ah well, I love my tea but I'm quite fussy having made workshop tea for many years. It's got to be the right shade of cardboard, not too much sugar, and have a sticky bun with it. I'm happiest among the dust and shavings, so it seemed like a good idea to keep the leaf tea somewhere safe and in good condition – yes, a tea caddy!

As an ex-antique restorer my idea of a caddy is a tropical hardwood at the very least, with a brass knob, a hermetic lid seal and a lead paper lining. Now, lead is unobtainable, so with a little thought and experimentation, I found aluminium kitchen foil will do just as good a job.



The router is still the most versatile power tool there is. Along with a vast range of cutters, jigs and gadgets – many of which you can also make for yourself – it can help produce high-quality woodwork. This series is intended to show you what the router can do, while assuming the reader has a general level of woodworking knowledge. We hope to show you the aspects of each project that specifically involve the router and how this great bit of kit can expand your woodworking skills.

Each month we will highlight the jigs, cutters and gadgets you will need to help you get more from this incredible machine. Feel free to send us pictures of your routing endeavours, or post them on the WPP forum at: www.woodworkersinstitute.com

THE JIG



1

The caddy box uses finger joints for their looks, while being strong enough to hold the box together. Finger jointing requires a special jig that once built, is easy to use and can be used time and again. The jig resembles a small router table



3

Assemble the table with blocks underneath the top joints to reinforce it, as only butt glue joints are used. Once dry, mark and drill to accept the fixing holes on your router. Mount your router, minus fine adjuster, with the straight cutter you will use for the finger joints, and plunge-cut through the surface. Unplunge and switch off

Make up the sliding fence using a butt joint and glue. Check it is at 90° with a square and leave to set. Now make a batten that fits closely in the table slot and screw it underneath the fence, checking it is at 90° to the fence face. You need slots to take a sub-fence in front which bolts in place and must be adjustable, hence the slots



5



2

Cut out the pieces to make the inverted U-shaped table. The dimensions are not exact but you need to take into account the unplunged height of your router with a fine adjuster fitted. The table needs to be wide enough to support workpieces and long enough for the sliding fence to move forward each time you cut a slot



4

Demount the router and use a 19mm straight cutter and straight fence to make an accurate slot to the side of the cutter hole in the table. This slot will accept the batten on which the fence is guided, so it needs to be a good fit



6

The last and rather vital component is a peg that is the same width as the cutter, and a height just slightly less than the finger height of the joints. This is mounted in the sub fence at the fingerjoint width to the side of the recess to take the router cutter. When making both the cutter slot and peg slot, hold a thin piece of ply tight to the sub fence to avoid any breakout. Finish the peg slot with a fine handsaw and glue the peg in place

Arbor & groove cutters

One of the most useful special cutter types to own is a set of groovers and a matching arbor. Once you invest in a set there are many possibilities for using them. Use them not just as a saw, but for frame joints, rebating, pattern following, glue joints and the like. Wealden, Trend and Titman have wide ranges of cutters ranging from a 2.5mm thick kerf with a scary 100mm diameter, down to a more pedestrian 10mm kerf with a 40mm diameter. You need to choose which groovers you want, but you can always add more later. To complete the set-up there are bearings, spacers and shims, and of course your choice of arbor. This latter item will be limited to whether you have a small or large router. A 1/2inch shank arbor can carry bigger cutters and more of them. Remember to mount the cutters the correct way round, and tighten the end nut and washer down for safety.

THE CUTTERS



The fingerjoints are cut with a 10mm Titman straight cutter; the table slot with a 19mm Trend gold edition straight; the rebates started with a small 4mm rebate Wealden cutter followed by an 8mm rebate Trend version; and lastly the top of the box is separated with a 1.5mm Wealden groover acting as a saw with a bearing in place to limit the cut depth – all shown left to right.

MAKING IT...



Prepare all material to thickness and width, excluding the top and bottom which stay over width for the moment. Note the box is made over height to allow for cutting the lid off and forming a rebate. Cut all four box sides to length and perfectly square.



1 Set up the finger jointing jig with a 9.5mm straight cutter in the router. The jig works by holding the workpiece against the peg and pushing the fence forward to cut the socket. This socket then locates on the peg and you cut the next socket, and so on, until all the joints are cut



2 As you can see on this test piece, I found that there was roughly a half joint left over at the end of the fingers. I decided to leave this on all the pieces and cut it off later when the box was assembled



3 Mark the joint pairs so you ensure the halves all match together correctly. And once you have cut all the joints, do a dry assembly to confirm all the pieces fit together nicely



4 Before gluing the box up, use spray mount adhesive to stick kitchen foil, matt side out, on all the inner caddy box faces. Trim it off the actual fingerjoints. Glue and clamp the box together using pads narrow enough to sit inside where the fingers are so the box will close up properly. Repeat on both sides, check for square and remove glue with a soft damp cloth. You then need to level the sides, front and back



5 The top and bottom are rebated in. Set up the router table with a small rebater at about half the depth of the top. Place the box over the static cutter, switch on and push the box against the cutter in the direction of cut, working all round, then do the same on the bottom. Then fit a larger rebater and repeat for the top and bottom – two cuts make the operation much easier

Bailey's Router Class



6

Round the corners of the top and bottom components so they will sit neatly in the box rebates. Rebate them, this time using a lead-in pin to start the cut. Take care to check the top and bottom will fit tightly into the box sides and flush when fully inserted. Glue the top and bottom in place



7

Decide where to separate the lid section, preferably on the joint between fingers. Do this with a 1.5mm groove so removing a minimal amount of wood. A bearing should be fitted that has a diameter sufficient to prevent complete separation – this avoids the box dropping onto the cutter and spoiling the job. Complete the cut with a fine handsaw and clean up the meeting faces carefully



8

The lower part of the caddy needs a lip to be formed with a rebate on the outside using a through fence on the router table. Once done, repeat the earlier rebating operation on the underside of what is now the lid, using the two-cutter approach – in retrospect, it is probably easier to do the lid first as the table will be already set up for rebating from step 5. With lid and base rebates cut, check the fit carefully and round the corners with a sharp chisel until the lid sits neatly onto the caddy box. Round over the outer edge of the lip on the caddy body so that the lid is easy to put on and take off.

9

Sand the exterior flat with the lid in place so the whole of each face is truly flat with the grain, using medium abrasive stuck to a board,

then fine abrasive. Lightly sand the box lip and each exposed edge (arris) of the box and apply a stain evenly, avoiding the foil lining. Once dry use light aerosol coats of clear satin lacquer, again keeping it off the foil lining, until a sheen is built up. Flat off between coats and wax after the top coat and fit a suitable knob. Time for tea! ■



Router torque

Q I've bought a router at a good price but with any longer cutters installed or deep cuts it vibrates quite a bit. When I took the nut off the spindle, a very small collet popped out, it doesn't really look up to the job of holding big cutters – could this be the problem?

A Collets and vibration in routers is a big subject which a simple answer cannot cover. However, when you say a good price, I suspect you mean cheap. Cheap routers come from the Far East and invariably have quite small, rather crude, collets installed. The longer and better machined a collet is, the better it will perform, with less chance of a cutter coming loose or vibrating badly. It may also be the case that the spindle or shaft and motor to which the cutter and collet are attached, may not be properly balanced. Better routers are dynamically tested and adjusted by machining slight

Left to right: 8mm cheap collet, 8mm high quality multi slit collet, 1/4 inch size collet which fits a large router, 1/4 inch standard collet extension with an 8mm shank



nicks in the motor core (not in the windings obviously) just as tyres are balanced on your car. All this improves the performance of a router. The only solution apart from buying a better machine, is to use shorter cutters and insert more shank into the collet if possible. Another source of vibration can be installing a collet extension designed to give more cutter 'reach' through a router tabletop. The best, most-expensive ones counter vibration well.

Email your router questions to: anthonyb@thegmcgroup.com