

PRODUCING MOULDINGS WITH MINIATURE ROUTER CUTTERS

by Ron Fox

USING MINIATURE CUTTERS

There is tremendous satisfaction to be gained from making your own mouldings and components for dolls' houses, models and other miniature projects. Making your own gives you control of the material and consistency in the product; a specimen of each piece can be kept to assist setting up next time.

The secret of successful miniature work is meticulous attention to detail at all stages of the project. Accuracy is essential; you cannot afford to be 1 mm out in a 3 mm thick moulding.

Minimum equipment requirements are straightforward: a light duty router, a small router table (which can be home-made) fitted with an accurately made fence, and the necessary cutters. Heavy-duty routers in large tables are perfectly suitable but not at all necessary. My own set-up consists of the smallest Charnwood table with a Hitachi FM8 router and an auxiliary fence of MDF, taped to the existing table fence.

The other piece of equipment that you will find invaluable is a home-made thickening table for use with your router. A "bridge" of MDF to support the router over the workpiece can be made (see fig. 1). This will enable you to prepare your material (especially small pieces) to exact size and use oddments left over from larger projects. You will use quite a lot of timber in test cuts to begin with, and you will welcome the savings in costs compared with buying ready prepared boards or mouldings.

The type of timber used is all-important. What is required is a very mild fine-grained hardwood which will take the fine detail of the tiny mouldings and give a clean cut. I have had the best results with jelutong, but lime is also suitable, as are a number of other fine-grained non-endangered species.

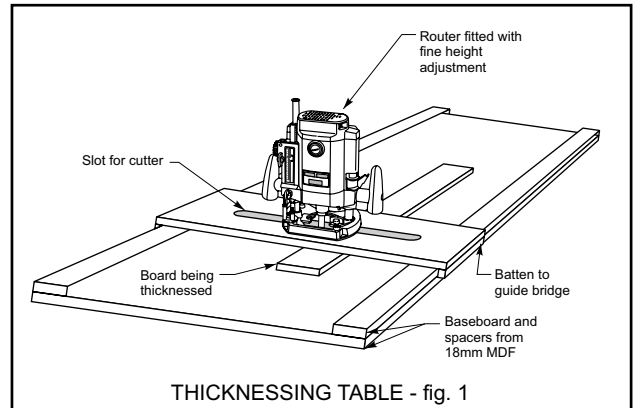
As an alternative to the router table, thickening may also be done with the router supported by means of its fence rods on runners or "skis" which can be made of hardwood, MDF or other suitable material (see fig. 2). The timber to be thickened is fastened to the surface of the table with fillets of hot melt glue along its edges (this application could itself justify the acquisition of a hot-melt glue gun) and the router, fitted with a flat bottom-cutting cutter, traversed over the board. Rebate cutter T1704, without a bearing, is excellent for this purpose.

The depth of cut is initially set to just trim the high spot of the board and is increased very gradually until the whole surface has been smoothed. The board is then turned over and the second side smoothed, deepening the cut until the board is the required thickness. A fine height adjuster fitted to your router is a great asset for this task. You will find that you can take timber down to extremely thin sections; 1 or 2mm is not all that difficult with suitable material. Any remaining cutter marks can be removed by sanding with a fine grade paper.

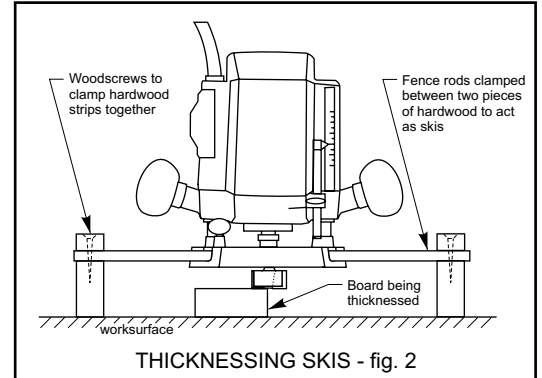
Having prepared your board, the required moulding is run off on the edge and then sawn off. The enthusiastic miniaturist will have a small fine-toothed circular saw for this, but I have successfully used a large Startrite bandsaw followed by careful hand sanding. When sawing off the moulding do not cut the strip too thin. It is all too easy to do and ruins all your careful work up to then.

In running your mouldings, a router table is virtually essential. The depth of cut and fence settings are also crucial. Most commercial router tables have fences with too large a gap for miniature cutters, hence the auxiliary fence with an aperture cut to match the size of the cutter. A springy hold-down to keep the board pressed flat to the table surface is also very useful and push stick and push block are essential. Test cuts will be required, but when you have achieved the correct settings you can make a simple gauge for depth of cut and fence setting for that particular moulding. Make a gauge (4mm MDF or birch ply - see fig. 3) for each cutter having found the correct settings for height of cutter and fence. For some multi-purpose cutters several gauges will be required. N.B. Label the gauges clearly with the cutter number and moulding.

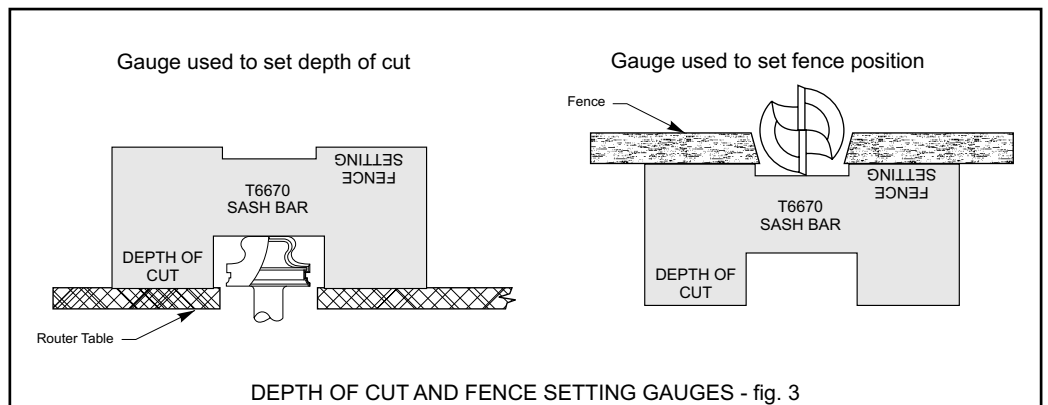
For owners of one of the demountable routers, e.g. the Bosch 500 and 600 or the Hitachi FM8, an alternative to the router table is to mount the router in a standard 43 mm drill stand and use it as a miniature overhead router with a suitable table and fence. I find the router table more satisfactory, but many miniaturists use a drill-mounted router for much of their work.



THICKENING TABLE - fig. 1



THICKENING SKIS - fig. 2



DEPTH OF CUT AND FENCE SETTING GAUGES - fig. 3

THE CUTTERS

A range of TCT cutters for miniature mouldings has been introduced by Wealden which, together with the smallest sizes of some of the existing cutters e.g. straight, core box, rebate, enable a wide range of miniature applications to be undertaken. Some of the cutters are very small with intricate detail in their profiles so care is needed in their use and storage. They should be kept spotlessly clean with a solvent but should not be honed for fear of blurring the fine detail.

The standard approach for moulding is to prepare the board to the exact thickness, mould the edge, and saw off. For example, the sash bar moulding T6670 requires a 3mm board run on edge past the cutter then turned round for the opposite edge to be run (see fig. 8). A 3mm board is prepared of suitable length and of a width sufficient to enable you to hold the top edge as the cut is made. A feather board to hold the workpiece into the cut is a great help as well as being a safety precaution. You do not prepare a piece 3mm x 4mm and try to run this over the cutter. After moulding, the section is parted off with the finest toothed saw you possess and cleaned by very gentle hand sanding with a fine grit paper. The edge of the board is then planed true and the process repeated until the board becomes too narrow to safely guide past the cutter.

Picture Rail T6695

The picture rail cutter requires a 6mm board and two passes: one with the board on edge and one with it flat. The first pass is made with the board flat (see fig. 4) to give the full-depth profile. The second pass is made with the board on edge and the depth of cut reset to create the curved top of the rail for the picture hook (see fig. 5). Note: both passes are made before the moulding is parted off.

Torus/Ogee cutter T6680

Different shape skirtings will be produced, depending on whether the board is moulded flat or on edge. In each case, the board is prepared to a thickness equal to the final height of skirting required, normally about 16mm, with the mouldings being parted off to the required thickness as per normal practice. The board is passed flat over the router table using the bottom part of the cutter to produce the Roman Ogee (see fig. 6). When producing the Torus Ogee, the top part of the cutter is used with fence and height settings to suit (see fig. 7).

Cornice/Pilaster cutter T6685

This is a versatile cutter capable of producing various types of cornice in various sizes, using boards of 8mm - 13mm. The boards are passed on edge over the cutter and the combinations of depth of cut and fence setting give cornices with or without quirks and beads. For each shape of cornice only one pass is necessary before parting off.

The cutter also produces a pilaster moulding for decorating tops and bottoms of vertical features e.g. external Georgian doors. The pilaster moulding can be produced in one of two ways:

- i) from a 6mm board passed on edge over the cutter and parted off to give the required height e.g. 30mm.
- ii) from a 30mm board passed flat to the router table and parted off at 6mm thickness.

Of the two methods, I prefer the second, but board of 30mm thickness is not always available and 6mm board is more economic.

Handrail/Sash Bar cutter T6670

Possibly the trickiest moulding is the handrail when you want a bottom groove in it. The rail section itself is straightforward (see fig. 9), but has then to be parted off for the groove to be cut. This can be done in a number of ways; I tape the parted off rail to the bottom of its board and hold the board to pass the workpiece over a 3mm cutter T203W. An alternative is to rebate a length of softwood and clamp this to the table to provide a tunnel through which to push the moulding. With both methods the fence is set by trial and error, so that a second pass with the workpiece turned round centres the groove.

Multi Profile T6665

With this type of cutter a wide range of cuts can be made by varying both the height of the cutter and the setting of the fence. A large number of variations is possible, e.g. you can produce skirting boards of differing heights but with the same torus moulding by varying the height of cut and keeping the fence setting constant. With such cutters you will constantly be finding new shapes and sizes.

