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BY RON FOX

Beyond the basics 7: Surface decoration

A very useful (but not widely known) type of cutter for giving a finished look to otherwise flat cabinetwork and furniture is the panel mould cutter. This offers a simple and inexpensive way of creating a range of interesting profiles

Panel mould cutters have bottom cut; their blades run all the way around the bottom of the cutter. This enables them to be plunged into the surface of the work to give a decorative effect, and makes them particularly useful for the surface decoration of doors, drawers and panels.

Basic principles

These cutters are meant for hand-held routing, and are generally used with guide bushes or bearings mounted above the blades, plus of course a suitable template.

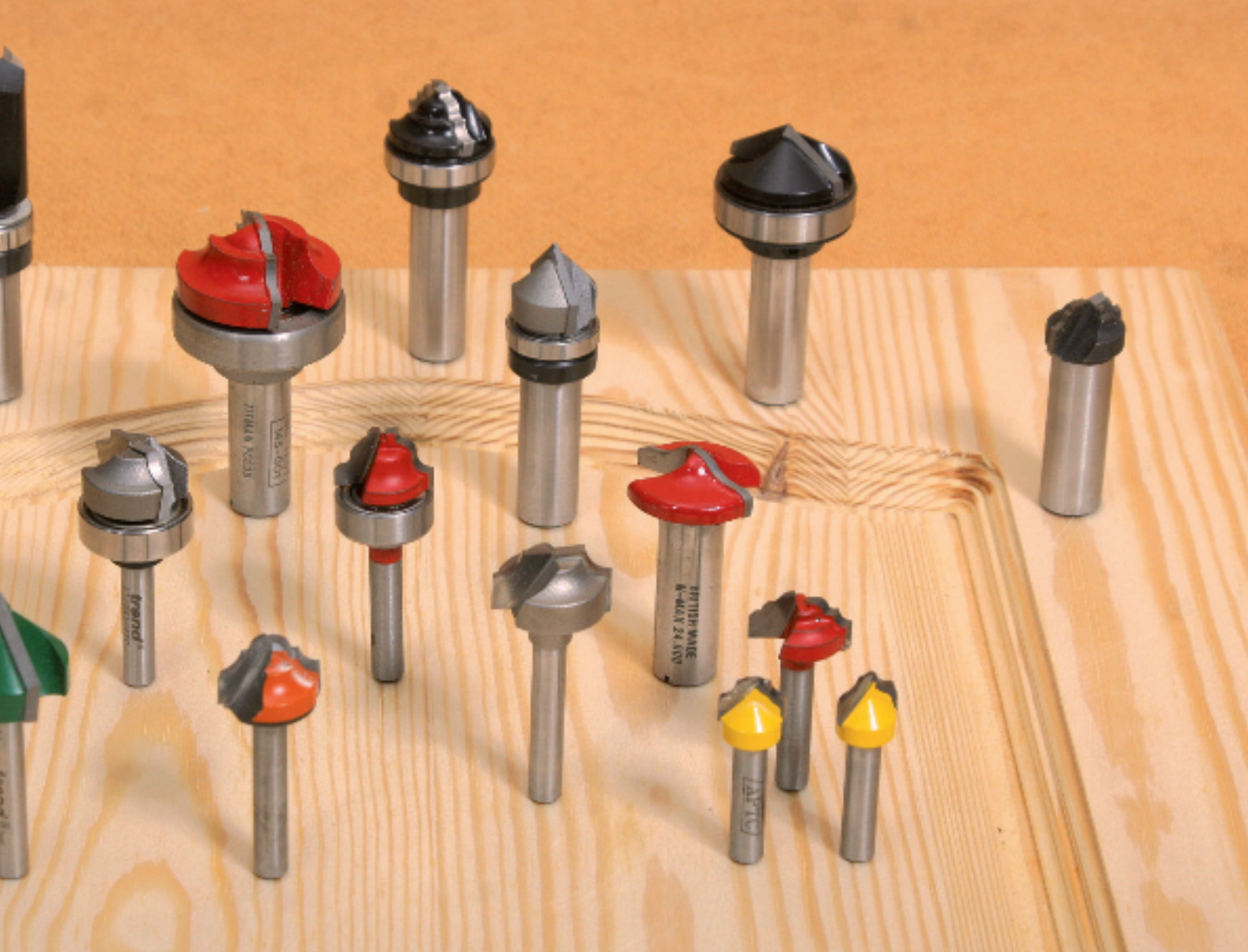


The door panel ready for routing with the straight edges in place



The cuts made in an 18mm MDF door and matching drawer front





Used with wide straights, large chamfer and plain ovolo cutters, they can create a wide range of realistic panel effects. In addition, they can be used with the side fence fitted to the router for edge-moulding panels.

At their simplest level, surface decoration cutters create a panelled effect by plunging a suitably shaped cutter into the surface of a board and following a template. At a more sophisticated level, you can use several cutters with different diameter guide bushes in sequence to place one cut adjacent to another and build up a more detailed effect.

As an example, consider a matching door and drawer front made in 18mm MDF with a 'classic panel' cutter in the router. This is a two-flute plunge cutter with a radiused bottom cut that allows it to be plunged into the surface of a panel. The one I'm using in the photographs is the 1/4in shank CMT 848-190, but similar cutters are available from all the major suppliers.

Making straight cuts

The cutter has a maximum diameter of 19mm, and I used it with a 28mm guide bush in a DeWalt 621 router. The guide bush/cutter offset is therefore 4.5mm ($28 - 19 = 9$, $9 \div 2 = 4.5$), which has to be



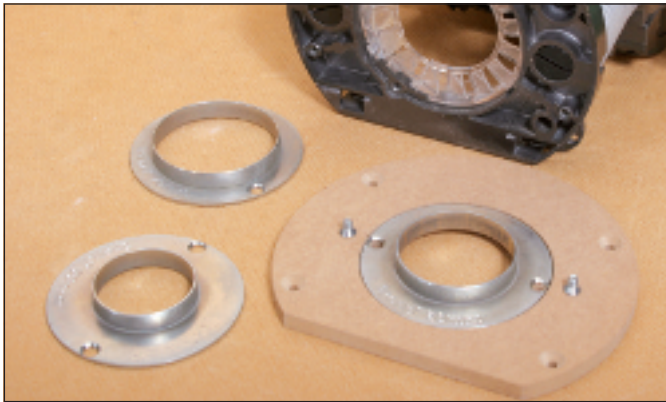
3 An edge moulded with the same cutter and the router side fence



5 An MDF bath end panel made using the same routing techniques



4 Another example of the plain panels on matching cupboard doors



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A home-made adaptor base for the Hitachi M12V to enable it to take the large-diameter Trend guide bushes

allowed for when you're making the template.

In this example the door and drawer front are both rectangular, so the template can consist of four straight edges taped to the surface. Take the workpiece and draw on it the notional outline of the 'frame'. Draw a second rectangle outside the first, bigger by the cutter/guide bush offset – 4.5mm in this case. Tape the straight edges to this outer rectangle, tape scraps of the same thickness material in the middle to prevent the router tilting, and set a shallow depth of cut on the router, **photo 1**. You might like to make a test cut first on a scrap piece of MDF to determine the final depth of cut.

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The first cut, made with a straight cutter and 50mm guide bush

Make the cut on the panel in several light passes, working in a clockwise direction. Be careful not to let the guide bush come away from the straight edges, or you'll spoil the cut. Make the drawer front in similar fashion, **photo 2**. The pencilled lines to which the straight edges were taped can be seen in the finished picture.

Moulding variations

You can use the same cutter, with the guide bush removed from the router and the side fence fitted, to mould the edges of panels, **photo 3**.

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The second cut, made with an ovolo cutter and 32mm guide bush

A second example of this technique can be seen in the fronts of a pair of wall cupboards I made for my workshop, **photo 4**. These were made with a slightly smaller version of the cutter used in the first example. The job was more complicated in that I had to make a template against which to run the guide bush.

A third example is a panel I made in 15 mm water-resistant MDF for the end panel of a bath. This required a slightly more complicated template and the same degree of care to avoid coming away from the edge of the template, **photo 5**.

The above examples all used the cutters with guide bushes to position the cuts, but bearing-guided versions of many of these cutters are also available. With these, the bearing is run against the template, doing away with the need for a guide bush and the calculation of the offset. The method is illustrated later in this article.

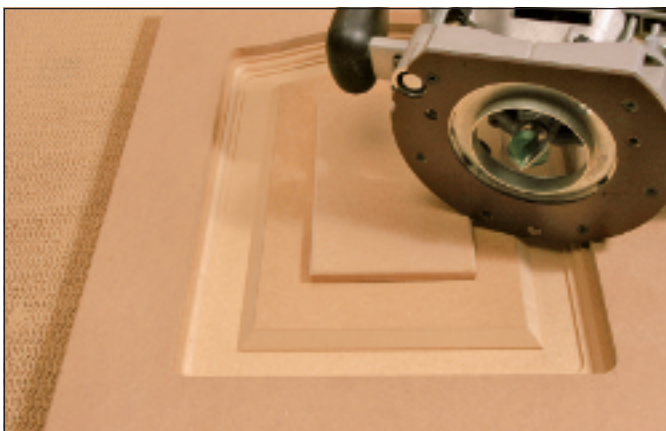
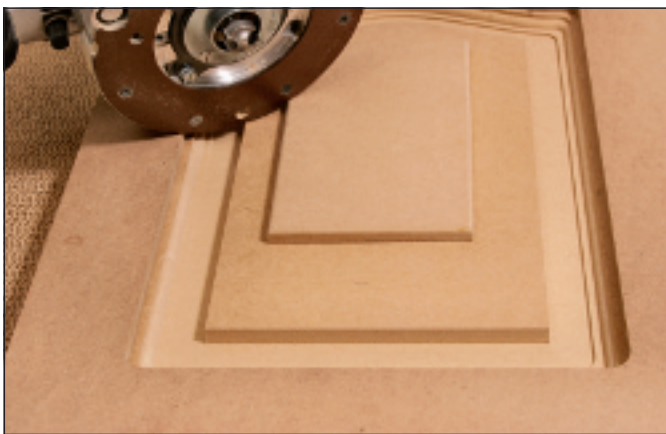
Note that this article is about the cutters themselves; the question of making templates to use them with will be covered in a future article in this series.

Using several cutters

More elaborate and realistic panelled effects can be created by using several cutters in conjunction with guide bushes of different diameters. Particularly useful are

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The third cut, made with a chamfer cutter and 70mm guide bush



the large 50, 60, and 70mm diameter guide bushes supplied by Trend for their T9 and T11 routers. They don't fit directly to any other models, as far as I know, but it isn't too difficult a task to make an adaptor base for your particular router to take these large bushes, **photo 6**.

A worked example

To illustrate the method, I made a cathedral arched door in 18mm MDF, using the Trend T11 with one standard and two of the large guide bushes, plus three different Trend cutters: the 4/60 19mm straight, the 7/2 ovolo and the C045 V-groover.

With the template taped to the workpiece, and the usual anti-tilt piece in the centre, the first cut was made with the straight cutter and a 50mm guide bush, **photo 7**.

For the second cut I replaced the 50mm guide bush with one of 32mm diameter, and fitted the 7/2 ovolo cutter, **photo 8**.

The third cut was made with the C045 chamfer cutter and a 70mm guide bush, **photo 8**.

Finally, the edge of the door was moulded with a bearing-guided ovolo cutter, **photo 10**.

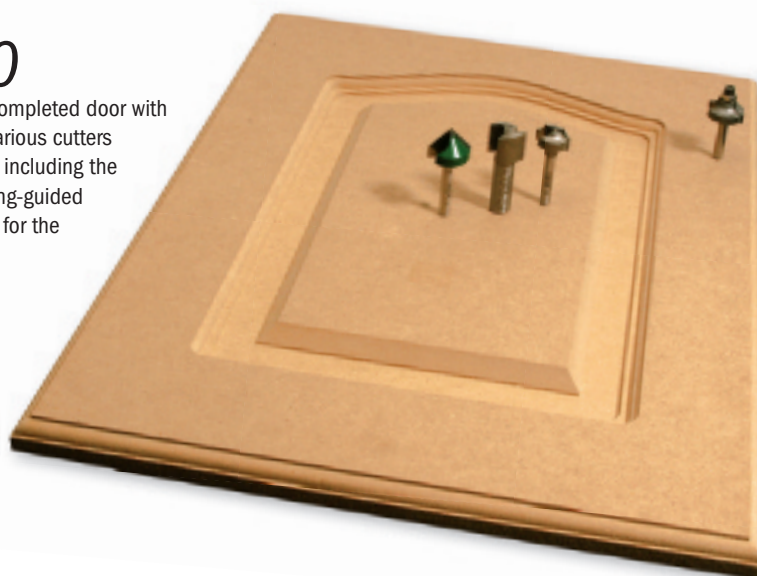
Bearing-guided cutters

Many cutters of this type come with a bearing mounted above the cutter blades. With these, the bearing rather than the guide bush is run against the template, and you have to take this into account when making your template. You might also have to make your template a bit thicker than when using guide bushes, to take account of the bearing above the cutter blades.

Excellent decorative effects can be achieved, but even more interesting results can be obtained by combining bearing-

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The completed door with the various cutters used, including the bearing-guided ovolo for the edge



guided and guide-bush based cutters with the same template.

Realistic simulation

A particularly interesting pair of bearing-guided cutters is offered by Wealden Tool, specifically for making simulated panelled doors. One is called a panel profile cutter, the other a panel raise cutter. The set is described in the Wealden catalogue as the 'Raise-a-Panel' set.

Using the same template as in the previous example, I made another cathedral arched door, this time in softwood. With the template taped to the workpiece, the first cut is made with the profile cutter in a clockwise direction around the template to a recommended depth of 10-12mm. The profile cutter is replaced with the panel raise cutter and the second cut made. The shape and size of the cutter pushes the cut

towards the centre of the panel and cuts away the inner part of the profile, creating a raised panel effect, **photo 11**.

Summing up

The above examples include one or two quite sophisticated panels, but striking effects can be obtained with simple panel-mould cutters and a few straight edges. Letting a pattern or design into an otherwise flat and featureless surface does wonders to bring your work to life.

FURTHER INFORMATION

- Trend
- 0800 487363
- www.trend-uk.com
- Wealden
- 0800 328 4183
- www.wealdentool.com

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A cathedral-arched door made with Wealden 'Raise-a-Panel' cutters

