Routers for Router Tables

Choose a fixed-base model over a plunge router

GOOD TABLE MANNERS

These features make some routers better suited than others to be used as stationary tools:

1. Large-diameter mounting screws
2. Easy-to-read adjustment scale
3. Aftermarket locking lever
4. Lots of travel
5. ½-in. collet
6. Motor detaches from base

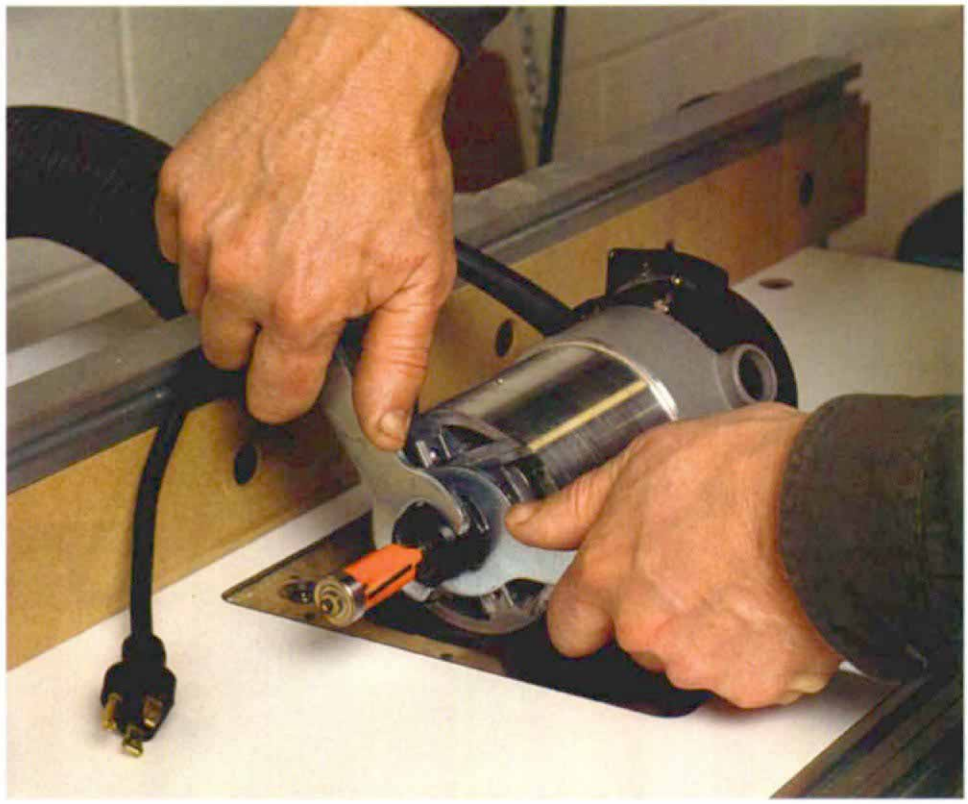
BY PATRICK WARNER

Although originally designed as a portable electric tool, the router performs just as well, if not better, as a stationary machine. Most of my routing is done with the tool attached to a small table made of medium-density fiberboard (MDF). Configured this way, the router can sometimes take the place of a shaper, a heavier-duty, more-costly tool that many of us can now do without.

Using the router inverted, however, poses some problems. The router was not designed for upside-down use. It's no surprise that most of the routers on the market are awkward to use in a table. I'm frequently asked what router works best in a table. Over the years I've tried just about every brand of router, and I can recommend five that work very well in a table.

Criteria for choosing a router

If you work fast or wish to use large panel-cutting bits, a large, powerful router is the way to go. Deeper cuts are possible with a 3-hp router. On the downside, a big router is also heavier and involves more of a wrestling match to get out from under the table. So depending on the work you do, a 1½-hp or 2-hp machine might



A fixed-base router is easily removed from its base, unlike a plunge router. *That feature makes it a snap to gain full* access to *the collet and locknut when changing bits.*

be all you need. I look for three essential criteria in a router to be used in a table.

1. The router should be easy to remove from its base. The easiest way to change a bit is by removing the router from its base and setting it on top of the table in plain view (see the photo at right).

2. The router should have a ½-in. collet. A machine with a ½-in. collet can take heavier loads than a router with a ¼-in. collet. Additionally, I prefer to use ½-in.-dia. shank router bits, which are also more durable and less prone to flexing under load.

3. The greater the range of depth adjustment, or travel, the more versatile the machine. Remember, the actual reach of a router will be minus the thickness of the tabletop to which it is attached.

Another feature worth considering—but it's not essential—is variable speed. If you plan to use 1½-in.-dia. or larger bits, go with a variable-speed machine. Otherwise, you won't get much out of this feature, which adds to the cost of the router.

For heavy-duty use, I rely on a 3¼-hp router—For heavy-duty router-table work, there is only one fixed-base machine that fits all of my criteria: the Porter-Cable Speedmatic 7518, a 3¼-hp, variable-speed machine. The 7518 also has the largest base, biggest base-plate screws and the capacity to soak up more heat and run longer than any other router, fixed base or plunge. (Except for the variable-speed feature, it is similar to the Porter-Cable 7519.) The Porter-Cable motor has four pins that ride in matching spiral grooves cut into the base. Depth changes are made simply by spinning the motor up or down (see the photo at right). Minute depth-of-cut adjustments are easy to make using the tool's adjustment scale (a large ring), which is marked off in 1/64-in. increments.

Although the 7518 is tough enough to do raised panels in one pass, I generally take two or three passes when I have to remove a lot of material. Limiting cuts to the equivalent of about ⅜ in. by ⅜ in. at a time produces little tearout, and stock is easy to control when feeding by hand.

When routing upside down, a lot of fine dust can make its way into the spirals in the motor housings of Porter-Cable routers and cause them to jam. To avoid jams, after routing, screw the motor up, toward the tabletop to eject dust from the grooves. Then screw downward to remove the dust; if you encounter resistance, go back up, then down again.

I know many woodworkers use a large plunge router in a table, but I've yet to find one that's as convenient to use as the 7518. The spring-loaded base of a plunge router is meant to be used right-side up, and it can be a struggle to make adjustments upside down. Additionally, a plunge router cannot easily be removed from its base, which means you have to change bits with the tool attached to the table.

Midsized routers—For medium-duty work, I like the Milwaukee 5680, Bosch 1617, DeWalt 610 and the Porter-Cable 690. To avoid

Depth ***changes made easy.*** *All fixed-base Porter-Cable routers have four pins protruding from the motor housing that engage with two spiral grooves cut into the wall of the base. An adjustment scale is graduated in 1/64-in. increments.*

Photos, except where noted: Anatole Burkin

The Bosch 1617 router has a lever (left) that allows for coarse adjustments and a screw dial for fine adjustments. The larger lever (right) locks the base to the motor.

The Milwaukee 5680 router has a stop screw that must be removed to withdraw the motor from its base.

straining the motor of a midsized router, I don't cut more than the equivalent of ¼ in. by ¼ in. in a single pass. The Bosch, DeWalt and Milwaukee routers have the greatest amount of travel. The Bosch and Porter-Cable machines also have the most friendly depth-adjustment systems, something you appreciate every time you use it.

The Porter-Cable 690 is designed along the same lines as its bigger brother (the 7518) and employs the four pins on the motor housing. An easy-to-read scale is graduated in 1/64-in. increments but is readable to 1/128-in. increments because of the wide spaces between graduations. Vertical travel is about 1¾ in.

Most routers employ a thumbscrew to lock the base to the motor. The Bosch 1617 is designed differently. It has a two-stage system, consisting of a pair of locking levers. A pull of the main lever loosens the motor. The spring-loaded second lever provides a coarse adjustment and also prevents the motor from coming loose from the housing unless pressure is maintained while the motor is twisted. A screw dial allows for fine adjustment. The dial is graduated in both 1/64-in. and 1/10,000-in. increments, with easy-to-read lettering. Travel is about 1⅞ in.

The DeWalt 610 has a rack-and-pinion adjustment mechanism. A dial on the end of the gear shaft is graduated in 1/64-in. increments, but the dial is very small, and the cursor mark, cast into the base, is

Five routers that fit the bill

Although any router can conceivably be fitted to a table, these models excel at the task. A fixed-base router is preferable over a plunge router because the motor is easily removed from the base.

rather wide, so you can't rely on these components for highly accurate adjustments. Rubbing white crayon on the numbers will improve readability, but for fine adjustments, make a trial cut and measure. The machine has 2¼ in. of travel.

The Milwaukee 5680 has a flat-head screw attached to the motor that prevents it from detaching from the base. I remove that screw for router-table work so that I can change bits with the motor out of the base. Use that screw as a guide when reassembling the router to the base. If there's not enough base wrapped around the motor, it may vibrate loose. The Milwaukee has a depth-adjustment scale, which is graduated in 1/64-in. increments. The black bars on the black dial are not as easy to read as some other routers that have white lettering on a black background.

There's one thing about the Milwaukee to be aware of: The motor housing has a spiral-cut groove, but that is for the adjustment scale only. The motor move's up and down in a straight line. Don't try and spin the motor to change depth as you would a Porter-Cable router. Because of its design, the depth adjustment is a bit awkward with the router inverted because the adjustment scale is really designed to work with the tool in the upright position. The Milwaukee has about 2 in. of travel.

Router safety and maintenance

The potential for a router motor to eject itself accidentally from the base is always a possibility with a fixed-base router whether it's being used upside down or right-side up. This kind of accident is typically the result of not fully tightening the thumbscrew that fastens the base to the motor.

I've replaced the thumbscrews on some of my Porter-Cable routers with adjustable levers, which are easier to grip and allow greater locking forces. The levers (including the bronze sleeve and flange nut) cost less than $10 and are available from Reid Tool Supply Co. (800-253-0421). The holes in the base for the locking lever will have to be reamed or drilled out slightly to accept the larger-diameter replacement part. Also, a flat must be filed on the nut to fit it to the base, which will keep it from spinning freely when the lever is moved.

The DeWalt 610 has a rack-and-pinion adjustment system. The numerals on the depth-adjustment scale can be made easier to read by wiping them with white crayon or ink.

Patrick Warner is an author and woodworker. His web site, www.patwarner.com, offers many tips on routing.

PORTER-CABLE
SPEEDMATIC 7518 (3¼ HP)

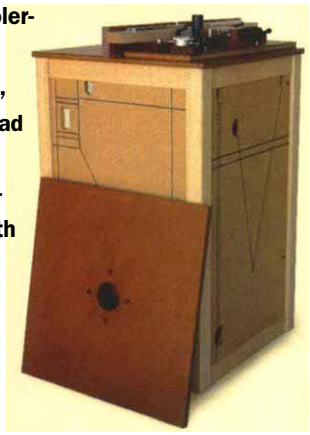
Why I don't like base-plate inserts

When I started woodworking, the routers sold in the United States were all fixed-base machines. Router tables were still new, and there weren't lots of accessories, such as base-plate inserts, available. My router table consisted of a solid piece of stock. To change bits, I simply unscrewed the router motor from its base attached to the underside of the table.

I still prefer a solid router tabletop because a base-plate insert introduces its own problems. True, a base-plate insert allows you to use any type of router, including a plunge router, because the tool and base can be removed from the table to access the machine's collet. But I find it difficult to adjust a plunge router when it is turned upside down.

A base-plate insert compromises any router table. Cutting a big hole in a table invites twist and cup. An insert must be perfectly level to get a smooth transition from table to insert. Additionally, some inserts themselves may bend under load.

I made a simple, inexpensive table from a piece of ⅝-in.-thick MDF (sealed on all faces and edges with three coats of Watco oil). Sanding thickness tolerances of cabinet-grade MDF are very high (0.002 in. to 0.004 in.), which ensures a flat table. Instead of using insert rings to keep the opening around the bit to a minimum, make two or more tops with different-sized openings. Attach the MDF to a wooden table with several cross braces underneath to ensure that it stays flat.



Photo, this page (bottom right): Patrick Warner