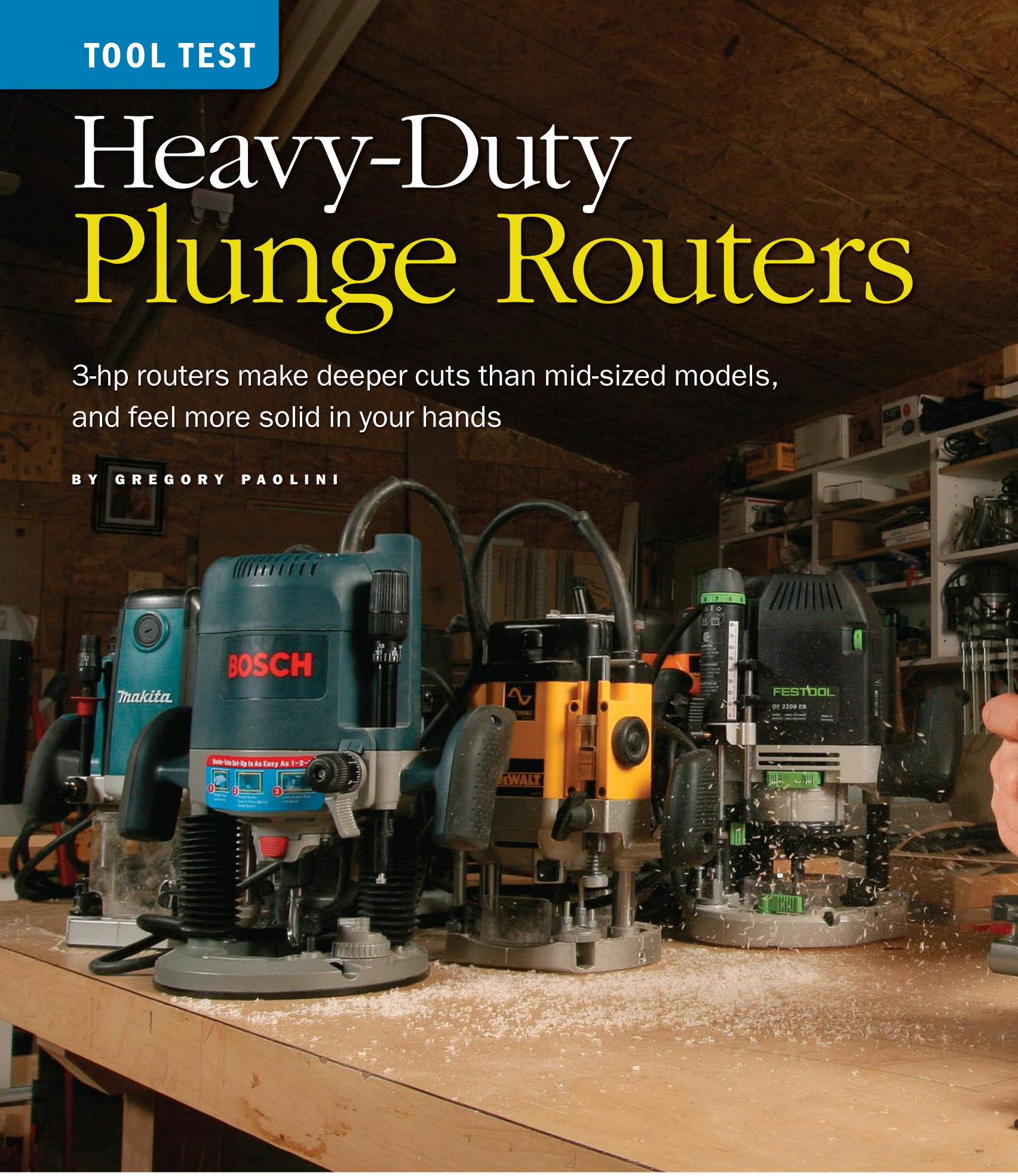
TOOL TEST

# Heavy-Duty Plunge Routers

3-hp routers make deeper cuts than mid-sized models, and feel more solid in your hands

BY GREGORY PAOLINI






Photos: Matt Kenney


Whenever practical, I rout my mortises, and there's no better router for the job than a plunge router with a big motor. The raw power lets you remove more waste in a single pass, and the increased mass means the router is easier to control and cuts more smoothly. But a big plunge router is great for more than just mortises. I use mine for template routing, profiling edges, and cutting dadoes and rabbets. That's why I was glad to say yes when *Fine Woodworking* asked me to test all the heavy-duty plunge routers on the market.

It takes a lot of power to breeze through deep mortises, so I looked only at routers with 3-hp motors. That's a lot of torque and power to have between your hands, so the routers needed soft start to tame torque at startup and variable speed so that the motor can be slowed down for large-diameter bits.

Also, I wanted all of the routers to work with guide bushings, making them more flexible for template routing than if you had to rely on bearing-guided bits. Fixed-base routers weren't considered because they aren't suited for routing mortises. In the end, I tested eight plunge routers: the Bosch 1619EVS, DeWalt DW625, Festool OF2200, Freud FT3000VCE, Hitachi M12V2, Makita RP2301FC, Porter-Cable 7539, and Triton TRA001.

## Power and cut were not an issue

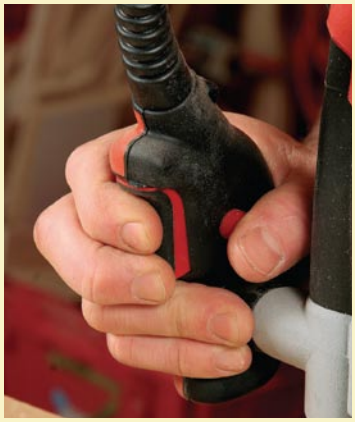
The primary reason to use a powerful 3-hp plunge router is to hog away waste more quickly. But all of that power is worthless if the cut ends up burned or bumpy. To get a sense of the power in these routers, I routed mortises in hard maple. To test cut quality, I routed two edge profiles (a roundover and an ogee) in cherry, which is prone to burning. To ensure that I was testing routers and not router bits, I equipped every router with its own set of new Whiteside router bits, which have been top performers in previous tests (*FWW* #137, #191).

All of the routers had enough power to rout the mortises with ease. I even used them to rout mortises 1 in. deep by ½ in. wide by 3 in. long in one pass. Cut quality wasn't a problem either. Every router left behind a surface free of chatter and

# Smart design makes the difference

## THE THINGS YOU DO MOST SHOULD BE EASY TO DO

***Bit changes are easiest on the Triton.*** *The spindle locks automatically. That frees up one hand to hold the router body for more stability.*



***Trigger switches are convenient and safe.*** *Both hands grasp the router when it starts. The Freud (shown here), Festool, Bosch, and Porter-Cable routers all have one.*



***Two smart ways to adjust speed.*** *With Hitachi's thumbwheel (left), both hands stay on the handles during speed changes. The Porter-Cable marks speed with RPM (right), so it can be set exactly to a bit's required speed.*


***Festool puts your hands at a comfortable angle.*** *That means your wrists are straight. Not only is this more comfortable, but it also gives you more control.*

burning on the edge profiles, which I also cut in a single pass.

### It comes down to ease of use, comfort

The increased power of big plunge routers comes at a price. They also are heavier, and if that mass isn't easy to control, the router won't be easy to use. I took note of how comfortable the handles were, how easy it was to reach and use the power switch and plunge lock, and how smoothly the router plunged and came back up in all situations.

I also spent time doing basic router tasks like changing bits, adjusting bit height, and adjusting the height of the turret stops. If any of these tasks are a pain, you will quickly tire of using the router.

The routers' edge guides and guide-bushing systems also got a close look. A problem with either one causes frustration and costs time, money, and material. I also evaluated each router's dust collection, because without effective dust collection, a router is a messy tool. As it turned out, dust collection is a problem for all of the routers except the Festool.

Considering all of these factors, one router stood out: the Festool OF2200. It's my choice for best overall. Ergonomically, it was the most comfortable router to use. Dust collection is excellent. The guide fence is the best of the bunch, with a great micro-adjustment knob. On the downside, the Festool's scale is metric only. I don't mind that, but I know others will.

However, the Festool OF2200 isn't for everyone. The router costs $800. Add the accessory kit that includes the edge guide and guide-bushing system, and you're up to $1,100. That led me to think about which router I would pick if I excluded the Festool from consideration. Again, the choice was obvious. The strangely futuristic-looking Hitachi M12V2 is a great router. It handles well, plunges smoothly, and has simple micro and macro height adjustments. Its edge guide (included) is very good, and the router comes with a proprietary guide bushing (none of the other routers come with a bushing) and an adapter for Porter-Cable-style bushings. I have only one gripe about the Hitachi. Its dust collection doesn't work.

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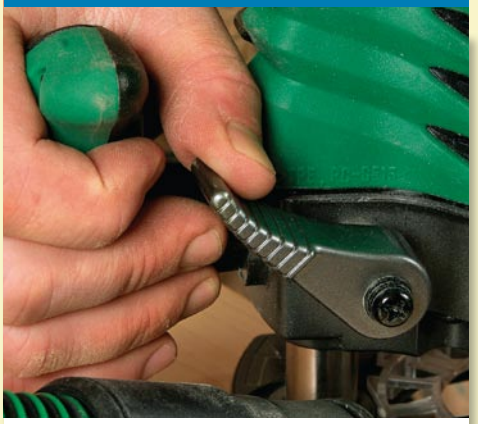
## PRECISION PLUNGES ARE THE SUM OF MANY PARTS

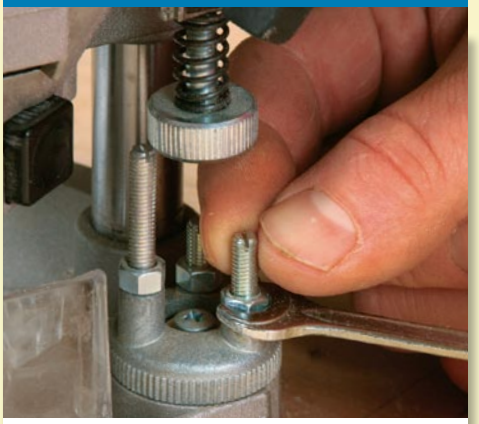
### LOCK LEVERS



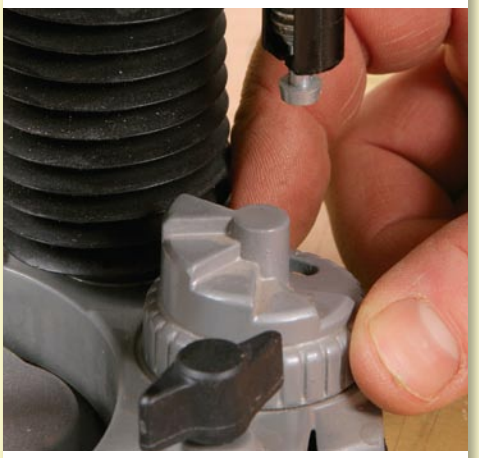
***Levers control plunge on most routers.*** *The best ones, like on the Hitachi, can be reached without letting go of the handle, and require little force.*


***Triton offers a second way to plunge.*** *Pull in the orange lock collar and twist the handle to lower the body on a rack-and-pinion gear. It's a nice way to get precise plunge control.*

### PLUNGE STOPS

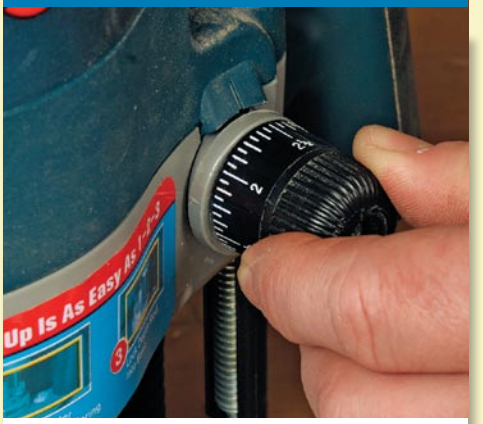


***Adjustable plunge stops are more versatile than preset ones.*** *They give precise control over how much material is removed on each pass. All but the Bosch have them.*



***Bosch's turret has preset stops.*** *There is ⅛-in. difference between the six stops. This saves setup time, but can be a bother if your plunge depth isn't a multiple of ⅛ in.*

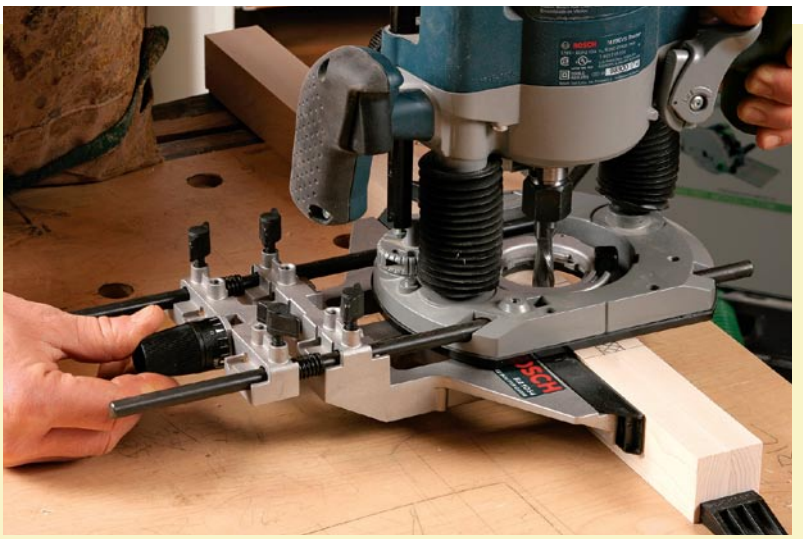
### HEIGHT ADJUSTMENTS




***Height adjustments are easy on the Bosch.*** *Loosen the lock and twist the knob. The depth rod raises and lowers on a rack-and-pinion gear.*


***Festool offers very fine micro-adjustments.*** *The numbered and audible detents on the knob are separated by 0.1 mm.*

## EDGE GUIDES SHOULD HAVE FINE ADJUSTMENT



***Better than a bump with your hand.*** *All but the Triton offer micro-adjusters. After rough setting the guide and taking a test cut, you can dial in the perfect distance.*

***Festool's micro-adjust knob is even better.*** *The fence is captured on the screw so that it moves both in and out with adjustments, and the knob is graduated.*

# Heavy-duty plunge routers


AUTHOR'S BEST OVERALL CHOICE

## Festool OF2200

festoolusa.com

**Street price:** $800

**Weight:** 17 lb. 4 oz.

The excellent angled grips on this router ensure that your wrists remain straight, which leads to greater control. The dust collection is far and away the best of the bunch. It left just a few chips in the mortises I routed, and it was flawless when routing edge profiles. The Festool also has the smoothest plunge, the best plunge lock, and easy micro and macro height adjustments. The edge guide is superb and the ratcheting spindle lock works very well. Finally, it was one of only two routers that have an automatic spindle brake, a nice extra when you have a lot of stopping and starting to do. On the down side, the drop-down dust shroud can make it hard to see the bit on deeper plunges. Also, the accessory kit that contains the edge guide and guide bushing system adds $300 to an already lofty price.


AUTHOR'S BEST VALUE CHOICE

## Hitachi M12V2

hitachipowertools.com

**Street price:** $225

**Weight:** 15 lb. 4 oz.

This router plunges smoothly and handles very well. A good edge guide, a proprietary guide bushing, and an adapter for PC bushings are standard, which is great given its cost. Adjustments to plunge depth settings are easy, and switching between macro and micro adjustments is simple. You need only flip a well-placed lever. The plunge scale is easy to read. A dial to adjust the motor's speed is embedded in the right handle, right where your thumb can make quick adjustments. On the down side, the router's dust collection is ineffective (as it is on most of the other routers). The spindle lock worked fine, but the wrench is stamped from thin steel and uncomfortable to use.


## Bosch 1619EVS

boschtools.com

**Street price:** $310

**Weight:** 13 lb. 4 oz.

At first, this router was uncomfortable, as the plunge-locking lever dug into my wrist. But after repositioning the lever, which required removing it first, I found it comfortable. All of the control buttons and knobs are well-placed and intuitive to use. The router handles very well and plunges smoothly, and the plunge lock works great, holding heights without budging. The $40 accessory edge guide is second only to the Festool's. Bosch's proprietary bushings work fine. A baseplate adapter is supplied with the router, but the bushings are not. The spindle lock worked well and bit changes were easy. A nice drop-forged wrench is supplied with the router. The dust-collection attachment works well, but makes bit changes difficult.


## Makita RP2301FC

makita.com

**Street price:** $350

**Weight:** 13 lb. 12 oz.

With lights in its base, this router had great overall visibility and sight lines. I also appreciated the very aggressive spindle brake, as it minimized the time wasted between mortises. The plunge lock worked well, and the depth rod and turret system were easy to adjust. However, the plunge mechanism was weak, and I occasionally had to help the router back up. The power switch was a nuisance, too. To turn the router on, you must first depress a lockout switch meant to prevent accidental starts. If you don't immediately release the safety switch, the router is locked on and turning it off can be a nuisance.

## DeWalt DW625


dewalt.com

**Street price:** $303

**Weight:** 13 lb. 6 oz.

With good balance and ergonomics, this router handled well. I especially liked its slick phenolic baseplate, which made it easy to steer the router for edge profiling. It plunges smoothly, and the locking lever works easily and holds the height tightly. The stops on the turret are simple to adjust to allow for variable plunge steps. Adjustments to the plunge depth, both macro and micro, are easy. Bit changes presented no problems, as the spindle lock worked and the wrench was beefy and drop-forged. The dust collection worked very well when I was mortising, but not so well while I was edge profiling. Unfortunately, the edge guide was disappointing, as its fence casting wasn't straight. And visibility became an issue on deep plunge cuts.

## Freud FT3000VCE


freudtools.com

**Street price:** $350

**Weight:** 13 lb. 6 oz.

Plunges on this router are smooth and the plunge-lock mechanism works very well. A large power trigger mounted on the right handle is easy to work with two fingers. I had no trouble seeing the bit during use. On the negative side, even though macro and micro plunge depth adjustments were easy, the depth indicator could not be zeroed. That means you must pick a random measurement to use instead and do the math to figure out how much you've plunged. The opening on the dust shroud is small and interferes with any profiling bit that has a moderate diameter. I could not raise most bits high enough to stand the router on its base. Also, the edge guide interferes with the baseplate, making it difficult to adjust.

## Porter-Cable 7539


deltaportercable.com

**Street price:** $377

**Weight:** 17 lb. 4 oz.

All of the adjustments are easy to make on this router. Motor speed is changed with a slider on top of the motor. It has a trigger switch on the handle, and the turret system is easy to zero and adjust. The baseplate opening is sized for Porter-Cable guide bushings, which is nice. However, it also means that you have to replace the baseplate to use profile bits with a diameter larger than the opening. The optional edge guide is sturdy, but the weight of the long aluminum extrusion sometimes pulled the router off plumb. The optional dust-collection baseplate works well, but we had trouble finding one to buy. There is no spindle lock.

## Triton TRA001


tritontools.com

**Street price:** $270

**Weight:** 13 lb. 14 oz.

Although this router has a standard plunge lever, you can also rotate one of the handles to raise and lower the body with a rack and pinion. The more I used it, the more I liked that option. The round handles are very comfortable. And bit changes were the easiest by far on this router, because the spindle is self-locking. The dust-collection setup looks impressive, but it is overpowered by the motor cooling fan, which sends dust and chips all over. The edge guide is actually an alternate baseplate, which is unique, but it did not glide easily over wood. Also, this is a top-heavy router, which made mortising tricky.