Choosing a Router

Whether you're in the market for a fixed-base, plunge, or dual-base kit, check out the latest and greatest features.

The router is arguably the most versatile tool in your shop. It can cut a wide variety of woodworking joints, shape many decorative edges, make signs, clone parts, joint edges, and much more. It's right at home with DIY projects, such as deck construction and sign-making with a template kit, but you can achieve astonishing precision in your shop with wood inlays and dovetailed drawers. It does it all—almost.

Best of all, the router produces great results quickly, thanks to its high-speed motor, simple set-up, and easy-handling maneuverability. Accuracy and adaptability are two other key characteristics. Check out any woodworking catalog, and you'll find page after page of bits designed for every conceivable task. You'll also discover guide bushings, router tables, and a host of other jigs and fixtures.

The router itself is at the heart of the system, and buying the right one can initially seem like a daunting task. You'll see fixed-base and plunge routers, varying horsepower ratings, and a wide range of engineering and design subtleties that can make using the router either a pleasure or a pain.

THE FIXED-BASE ROUTER excels at simple, quick depth adjustments, making it the first choice for most handheld operations. If you buy a dual-base kit, you gain an additional advantage: You can mount the base permanently in your router table, and then move the motor to the plunge base for handheld work.

THE PLUNGE ROUTER is rarely mounted into a table because the depth mechanism is difficult to use upside-down. Instead, you'll often employ a plunge router in handheld mode to make a series of progressively deeper cuts or when making cuts that start or stop without going all the way to the edge of the workpiece.

At its heart: the motor

The high-speed motor is the key part of a router. All the other parts serve subordinate roles: regulating the motor speed, shifting its position, or gripping a bit.

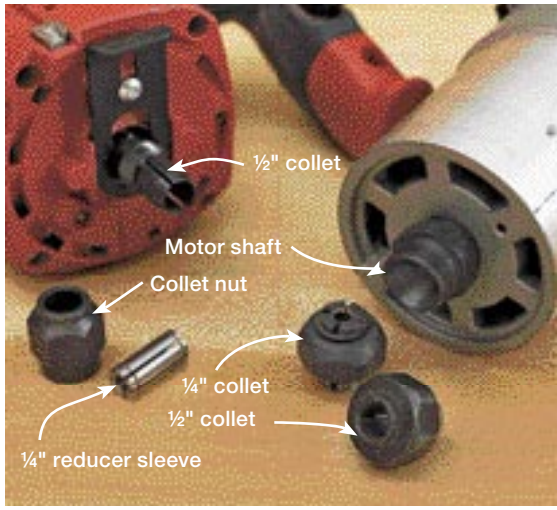
You'll find some routers at the low end of the power spectrum, and a few models at the upper range, but the vast number of routers fall into a middle range of approximately 1½ to 2¼ hp.

You'll probably not find a significant practical difference in routers that have even a ½-horsepower difference, say between 1¾ and 2¼ hp. That's because you won't often push the motor to its maximum.

Staying in control

A typical annoyance occurs every time you start a router, with the sudden torque surge twisting the tool in your hands. It's somewhat like a dragster that's either stopped or running full-bore.

SOFT-START CIRCUITRY helps tame this rabbit-start tendency in many routers. The result is more like gently accelerating your car instead of mashing pedal to metal. It may seem like a minor refinement, but your hands, arms, and shoulders will appreciate the difference after an extended work session.



These parts typify the collets you'll see on mid-range routers. Separate ½" and ¼" collets thread onto the motor shaft at *right*. The other collet (*left*) is part of the shaft, and to use ¼"-shank bits, you insert a reducer sleeve into it.

ELECTRONIC SPEED CONTROL helps maintain more consistent cutting by feeding more power to the motor when it's under strain. Tools that don't have this electronic feedback circuit typically take longer to recover speed after the bit enters wood. The ability to maintain a smooth feed rate from the beginning of the cut to its end promotes a uniform surface.

THE SWITCH itself may seem like another small topic, but look for a convenient and logical location—you don't want to study your router every time you turn it on and off. An ideal location is one that you can reach while keeping both hands on the router's grips, but that's not always possible. Motors that migrate from a fixed to a plunge base, for example, sometimes compromise ideal switch location to achieve multi-base versatility.

Ironically, a switch location that's less than perfect in handheld mode is often wonderfully situated when you turn the router on its head to mount it in a table.

VARIABLE SPEED is another motor control that you may find useful. In fact, the ability to dial down the RPM is mandatory when you're using large-diameter bits. Without speed control, using a panel-raising bit would be a hair-raising experience because the bit would develop a dangerously high rim speed.

If a router meets all your needs except for built-in speed control, don't worry. You can buy an accessory plug-in unit (for about $40) for a single-speed router without a soft start that provides an infinite dial-in range. In fact, you may even prefer this option to the limited number of speed steps offered on some routers.

NOISE LEVEL is a topic most manufacturers don't talk about much because all routers are loud. Magazine tool-comparison articles, though, sometimes use this as an area of discussion. It's really a moot point, though, because you should always wear hearing protection when routing.

Grab onto the bit

THE COLLET is the "chuck" that grips the bit, and many incorporate a "self-releasing" mechanism that helps pop the router bit free after you rotate the collet nut a full turn. Most mid-size routers include both ¼" and ½" collets. Some, though, come with only a ½" collet and accommodate the smaller bit diameter by means of a reducer sleeve (see photo at *opposite bottom*). The sleeve grips just as tightly as a dedicated collet, but doesn't always release as quickly.

A SPINDLE LOCK can simplify bit changes because you need only one wrench. The dual-wrench system is far from extinct, though, and is easy and dependable when you're using the router in handheld mode. It can get cumbersome when the router is table-mounted unless you have a router lift that elevates the collet above the table for bit changes.

OTHER COLLET SIZES are sometimes available—metric diameters, for example. But these aren't usually necessary unless you already have a collection of bits with metric shanks. There's such a wide selection of bits in ¼" and ½" sizes that converting to metric doesn't produce a practical gain.

Ready to take the plunge?

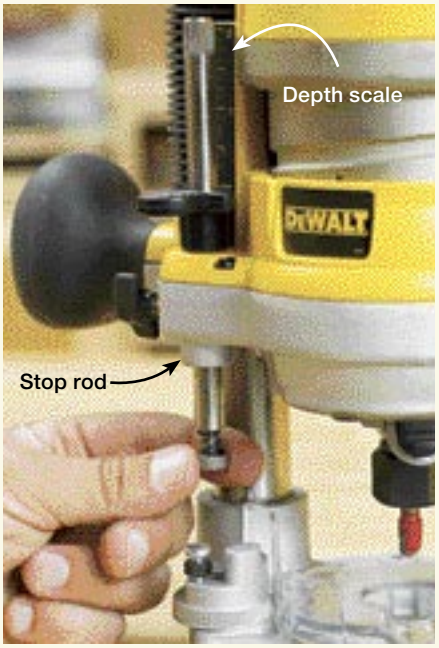
Buying a router was formerly an either-or proposition that forced you to choose between a fixed-base or plunge router. But the marketing gurus at the tool companies finally got the idea of selling a kit that included one motor and two bases. Best of all, the kit gives you the function of two routers at far less than twice the price.

MAKING BASE CHANGES is an inherent task with these kits. Thus moving the motor between the bases should take as little effort as possible. The motor should slide into and out of the fixed base easily (but not so easily that it will drop to the floor if mounted in a table).

The motor also should install easily into the plunge base. If you can't get your hands on the router to check the ease of this procedure before buying, you may be able to find the information online. At many toolmakers' Web sites, you can download the owner's manual and read the instructions.

SETTING THE CUTTING DEPTH isn't complicated with fixed-base routers. These employ two different technologies: rotating the motor in the base or moving the body up a set of threaded rods. Both systems are accurate, but the threaded-rod system can be slow when making large depth changes.

Fine-tuning depth of cut



The bottom end of the stop rod threads in and out to make minute adjustments on some plunge bases. Depth scales can vary in their ease of use. In this case, the rod partially obscures the markings.

TO SET PLUNGE DEPTH or to prepare to make a series of progressively deeper cuts with a plunge base, two mechanisms work in tandem: depth-stop rods and turrets. The depth-stop rod "zeroes" the bit to the material; from there, you use the tool's scale to set the cutting depth. A quick-release button on some routers eliminates the need to rotate the rod for large adjustments.

For progressively deeper cuts, a stepped, rotating turret on most plunge bases controls the depth of each cut in the sequence. Turrets vary in the number of steps and their increment.

In summary

If you've never owned a router before, buying one will be an eye-opening experience that equips your shop with a broad spectrum of new capabilities. But with a dual-base router kit, you'll gain extra convenience and nearly double your capabilities at a budget-friendly price.

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