



A beginner's guide to choosing router bits

You've finally got that new router, and you're eager to use it. High-tech as it is, though, it's toothless without router bits. But which should you buy? If you haven't used a router much, the options can be dizzying. Here's what you need to know.

First, router bits come in many profiles. That's the term for the shape of the cutting edge. Here are some of the most common:

Straight bits:

A workshop staple, these bits make cuts straight into a material to form a groove or dado (a groove across the wood grain) or to hollow out an area for a mortise or inlay. They come in a variety of diameters and lengths.



Straight bit

Rabbeting bits: Guided by a spinning pilot bearing at the tip, these bits are designed specifically to cut a rabbet (shoulder) in the edge of a workpiece often used to join pieces. They can be purchased in a set that includes bearings of different diameters, allowing a single bit to produce rabbets of different sizes.



Rabbeting bit

Flush-trim bits: As the name suggests, these bits are used to trim the edge of one material flush with the edge of another – for example, trimming a veneered surface flush with a substrate or using a pattern to create multiple identical pieces. They usually are guided by a pilot bearing that's the same diameter as the cutter. The bearing may be at the tip of the bit or at the base.



Flush-trim bit

Chamfer bits: These bits cut a bevel of a particular angle to ease or decorate the edges of a surface. They also can create the beveled edges needed to join multi-sided constructions.



Chamfer bits

Edge-forming bits:

As the name suggests, edge-forming bits are most often used to cut a decorative edge. For example, round-over bits cut a rounded edge of a particular radius (such as 1/8" or 1/4"); ogee bits cut variations of an S-shaped profile; edge-beading bits cut a quarter- or half-circle profile (called a bead); and cove bits cut a concave quarter-circle.



Round-over/beading bit

Many edge-forming bits include a pilot bearing. In most cases, these bits are used for final decoration of a project where edges have already been established and can serve as guides for the bit.

Specialized bits: This category includes bits dedicated to specific tasks. Examples are molding bits, which incorporate multiple edge-forming profiles into a single bit; stile-and-rail bits, which are used to shape the frame pieces in frame-and-panel constructions such as cabinet doors; and raised-panel bits, which shape the edges of a door panel to fit into the corresponding slot in the frame's stiles and rails. These bits are somewhat large and can be used safely only in a table-mounted router. Other specialized bits include dovetail bits, drawer-lock bits, finger-joint bits and lock-miter bits. ▶

Second, there are two common sizes of router bit shanks: 1/4" and 1/2".

Many routers come with interchangeable 1/4" and 1/2" collets so that either size bit can be used, but some accept only 1/4" shank bits. Whenever possible, use bits with 1/2" shanks. They provide better stability with less vibration, and they typically produce a smoother cut and have longer cutter life. Except for very small and very large profiles, router bits typically are available in both shank diameters.



Third, most router bits have solid-carbide or carbide-tipped cutting edges. Most of the profile bits will have carbide cutters, which are harder than steel and will hold an edge longer – 10 to 25 times longer – but also are more brittle. So while carbide-tipped bits are preferable, you must handle and store them carefully to avoid chipping the cutters.

Fourth, there are visible signs of quality.

While you can't assess some factors by eye – such as the hardness and quality of the carbide or the bit's overall balance, there are things you can look for. High-quality router bits have carbide cutters that have been sharpened to a fine edge and that are thick enough to allow for multiple regrindings. The brazing that joins the carbide tip to the bit will appear even. And high-quality bits will incorporate a design that minimizes the risk of workpiece kickback. These anti-kickback bits have more body mass, and their enlarged bodies prevent the bits from biting too deeply and catching on the material. The greater body mass also helps to dissipate heat and keep the bits sharp longer.

Finally, price can be an indicator of quality. The old saw applies: In general, you get what you pay for. Here at Rockler, we offer our own line of router bits designed for the serious woodworker. Rockler bits are made with thicker, high-quality carbide and are sharpened with fine diamond abrasives. They also are precision-balanced and designed for superior chip ejection. We're confident that our router bits will provide safe and smooth cutting for a long time. That's why we offer an unconditional guarantee.

Now that you know the basics, there are a few more things to think about in choosing router bits.

Ask yourself a few questions: Are you buying with a specific project in mind? Or are you just trying to assemble a starter set? For each bit, are you likely to use it only occasionally, or will it get a workout every day? How much do you have or want to spend?

If you have a project in mind, choose the bit that is best suited to the job. If you're assembling a starter



Rockler's boxed 5-piece starter set (#29047)

set, consider buying a couple of straight bits (maybe 1/4", 1/2" and 3/4"); a few round-over bits (1/8" and 1/4"); a rabbeting bit with interchangeable bearings of different sizes; a 45° chamfer bit; and an ogee bit.

A convenient and economical option is to buy a set, such as Rockler's five-piece carbide-tipped starter bit set (Item #29047). It includes a rabbeting bit with four bearings to cut 1/2", 7/16", 3/8" and



Rockler's round-over/beading bit set (#60683)

5/16" rabbets; a 3/4" x 1" long straight bit; a 3/8" radius x 5/8" high round-over bit; a 45° x 1/2" chamfer bit; and a 5/32" radius x 15/32" Roman ogee bit. All have 1/2" shanks to reduce chatter and provide maximum performance.

Rockler also offers sets of carbide-tipped straight bits in the most popular diameters (Item #20064 and #60579) and a set of undersized plywood bits matched to the actual thickness of 1/4", 1/2" and 3/4" plywood (Item #60788), as well as sets of rabbeting bits (Item #91595 and #91584) and round-over/beading bits (Item #60683) with interchangeable bearings of different sizes.

Another consideration is whether you will be mounting your router in a table for some operations or exclusively making handheld cuts. Some bits can be safely operated only in a table-mounted router with a variable-speed feature. So, for example, if you want to make a cabinet with frame-and-panel construction, you'll need to buy or build a router table before you can safely use the stile-and-rail bits and panel-raising bits required for such a project.

Finally, be sure to match the shank size of the bit to the collet size of your router. If your router will accept either size, go with 1/2" shanks for increased safety and performance. If not, buy the size that fits your router.