

★★ THE MAIN EVENT ★★

CLASSIC DADO DUEL



BITS vs. BLADES

It's time to let the chips fly!

IT'S A MATTER OF PRIDE & PRECISION

When you need to cut dadoes, grooves, or rabbets, you want to do it cleanly and quickly. You can make these cuts with a tablesaw or router, but which proves best? Well, as you'll see, that depends on several factors.

The Dado Challenge

Kevin Boyle and Jeff Mertz—the guys who design and build most of the *WOOD*® magazine projects—were discussing options for cutting bookcase dadoes one day, and began debating which tool would be best: the tablesaw or router. Soon, more of our editors were drawn into the discussion, and we decided that only a showdown could settle the debate once and for all.

So we gave Kevin and Jeff the same assignment, but on different machines. Kevin chose the tablesaw, Jeff the router, along with a self-squaring straightedge and a guide bushing. The contest: to see who could finish first—with accurate results, of course.

The ground rules: Each had to create a pair of 11×42" bookcase sides with three dadoes for ¾" shelves, a rabbet for a ¾" top, and a rabbet for a ¼" back on each piece. Nothing could be set up ahead of time, although the project parts and any jigs or auxiliary fences could be cut to size. Both chose to make all cuts in one larger panel, and then rip it in half for perfectly matching sides. Now, let's get ready to rumble...

Jeff routs his way to clean dados with a modest tool investment



3:18

After installing a $\frac{5}{8}$ " guide bushing and $\frac{1}{2}$ " downcut spiral bit, Jeff sets the bit's cutting depth with a reliable combination square.



4:15

With the right jig arm screwed to the fences, Jeff clamps the left jig arm to it, spacing it with a piece of $\frac{3}{4}$ " plywood and a strip of $\frac{1}{8}$ " scrap (to match the bit-and-bushing offset).

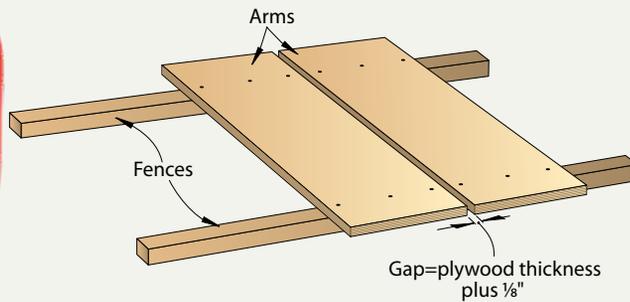


7:31

Jeff makes a test cut in a spare piece of plywood: routing one pass against the right jig arm and a second against the left to complete the dado.



Router Dado Jig

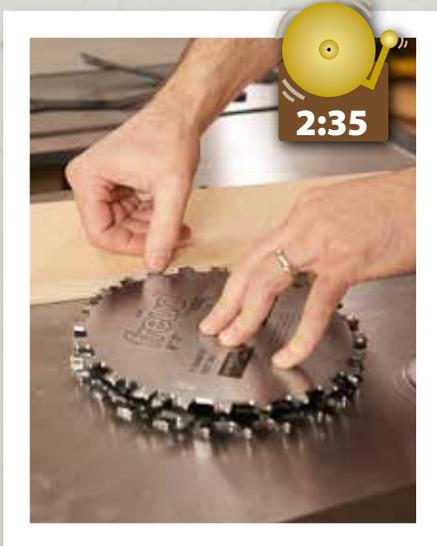


When the dust cleared, here's what we learned

Kevin and his tablesaw finished about a half a minute ahead of Jeff and his router. We stopped the clock when Kevin reinstalled the 10" general-purpose blade, ready for both woodworkers to rip their panels in half.

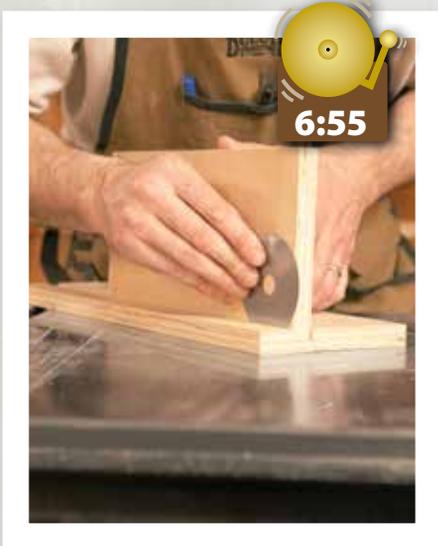
As a result of this showdown, we learned that with either a stacked dado set or a spiral (or straight) carbide router bit you can cut dados, grooves, and rabbets in about the same time. Each tool has its

KEVIN makes short work of his cuts with a tablesaw and premium dado set



2:35

Kevin stacks the dado blades and chippers next to a scrap of shelf stock to get a close estimate on the right combination. (Place the blades gently on the tablesaw top to avoid damaging the carbide teeth.)



6:55

After installing the dado set and making a test cut, Kevin checks the fit. Dang, it's too wide! He measures the overcut by inserting shims; he'll remove the one (or ones) from his setup that fits tightly in the gap.



11:23

With an auxiliary fence clamped to the rip fence and set against the dado blades, Kevin makes his first cut, the $\frac{3}{4}$ " top rabbet.



12:40

Jeff begins his third dado in the actual workpiece. (He cut the 3/4" top rabbet earlier using the guide bushing and jig.)



16:41

After removing the guide bushing and installing the router's edge guide accessory, Jeff sets the bit's cutting depth for the 1/4" back rabbet.



18:27

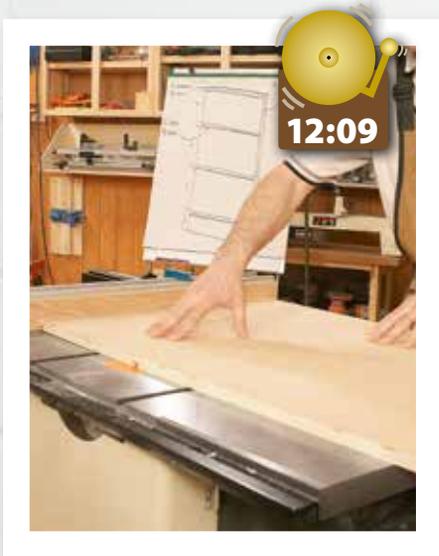
Jeff routs the first of the two 1/4" back rabbets. Job completed at 19:44.

advantages. Once you have a tablesaw set up with a stacked dado blade, you can make multiple dados quickly by simply repositioning the rip fence. Go with the tablesaw for production-type time savings. But the router offers you the advantage of a lightweight tool that you move around the workpiece, saving you from repeated lifting and repositioning heavy panels. And one good downcut spiral bit (1/2" is a good first choice) works for multiple everyday tasks—mortises and inlays, for example.

There will be times, however, when your workpiece dictates the best method. For example, if you're building 6'-tall bookcase sides, go with the router. Maneuvering panels that size across a tablesaw will prove unwieldy and could result in inaccurate cuts.

Our advice: Use the method that makes you the most comfortable and yields the best results. If you can't afford a premium dado set, or a tablesaw to power it, you can get super-clean cuts with an affordable router and a single router bit.

Watch the Dado Duel in real time for FREE at woodmagazine.com/dadoduel.



12:09

After resetting the rip fence, Kevin cuts his first dado, second cut overall.



13:34

Because the stacked dado set and auxiliary fence nullify the fence scale, Kevin uses a measuring tape to set the rip fence to the correct position for the third dado.



16:36

After setting the auxiliary fence over the blade and making a relief cut—something he did not do for the first rabbet—Kevin makes his final cuts, the two back rabbets. Job completed at 19:16.

More help in choosing a tablesaw or router

In our Dado Duel we grabbed a stacked dado set and downcut spiral router bit—both sharp—from our shop, so we got clean, tear-out-free cuts. Use anything less, and your projects could

suffer. Below are some cut samples to show you the kind of results you could expect to get, depending on the quality and sharpness of your blades and bits.

Stacked Dado Set Pointers

Price range: \$75–\$250

👉 By mixing outer blades, chippers, and shims—often a time-consuming process—you can cut any width from 1/4" to 13/16", although some sets go up to nearly 1". (The length of your tablesaw's blade arbor could limit maximum widths.)

👉 Small, benchtop tablesaws with universal, direct-drive motors might struggle to power a wide dado setup. So opt for a 6"-diameter stacked dado set, which requires less power, for these saws.

👉 You can make a full-depth cut in one pass on most tablesaws. (Some benchtop saws struggle with channels wider than 1/2" and deeper than 1/4".)

👉 Once you've set up the desired width, you can quickly cut multiple channels by simply repositioning your rip fence, miter gauge, or crosscut sled.

HIGH-QUALITY VS. LOW-QUALITY STACKED DADO PERFORMANCE



When sharp, better-quality sets (costing \$150 and up) produce flat-bottom channels with no surface tear-out.



Dull or lesser-quality sets tend to tear out surface fibers and leave channel bottoms with ridges and scoring marks.

👉 Nearly all the dust and debris from these concealed cuts gets whisked away by the dust collector, or falls below the saw.

👉 If you need to cut beveled channels, it's much easier to tilt a stacked dado set than to make a jig for a router.

👉 We do not recommend cutting stopped dados, grooves, or rabbets with

a tablesaw—workpieces can be damaged or kicked back at you with alarming force and speed.

👉 Steer clear of dado sets that come with paper shims that tear easily and others that don't include shims at all.

Freud 10-piece metal shim set: part # SS100, \$12, amazon.com.

Straight or Spiral Router Bit Know-How

Price range: \$10–\$75 apiece, \$40–\$150 for sets

👉 It's easy to rout stopped dados, grooves, and rabbets, by either using stopblocks or by eyeballing a mark.

👉 Odd plywood sizes usually require you to make multiple passes with a smaller bit to cut a perfect-fitting channel.

👉 When used with a jig or fence preset to a desired width you can quickly rout multiple channels of equal size simply by repositioning the jig.

👉 Spiral bits, especially those made of solid carbide, can cost 2 to 4 times as much as straight bits, and prove more difficult to sharpen when dull.

👉 Set your router's speed control near the fastest setting—based on the diameter of your bit—for best results.

👉 When routing with a handheld router, dust and debris spew everywhere. Dust-collection shields and attachments can be effective, but can be cumbersome with a vacuum hose attached.

👉 When routing with dust-collection shields in place and hooked to a shop vacuum, nearly all dust gets sucked up so you don't have to breathe it. 🌿

HIGH-QUALITY VS. LOW-QUALITY STRAIGHT BIT PERFORMANCE



Straight bit

Sharp, premium bits produce clean, tear-out-free channels with flat bottoms and square shoulders.



Lesser-quality bits—sometimes right out of the box—produce fuzzing rather than cleanly shearing surface fibers.

DOWNCUT OR UPCUT SPIRAL BIT? THEY BOTH HAVE ADVANTAGES



Downcut

A sharp downcut bit—the preferred choice for routing dados and grooves—produces clean, tear-out-free channels, but doesn't clear debris as well as upcut bits.



Upcut

Upcut spiral bits quickly remove chips from a channel, preventing heat buildup and dulling. But upcut bits tend to lift surface fibers, so reserve them for routing mortises.

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