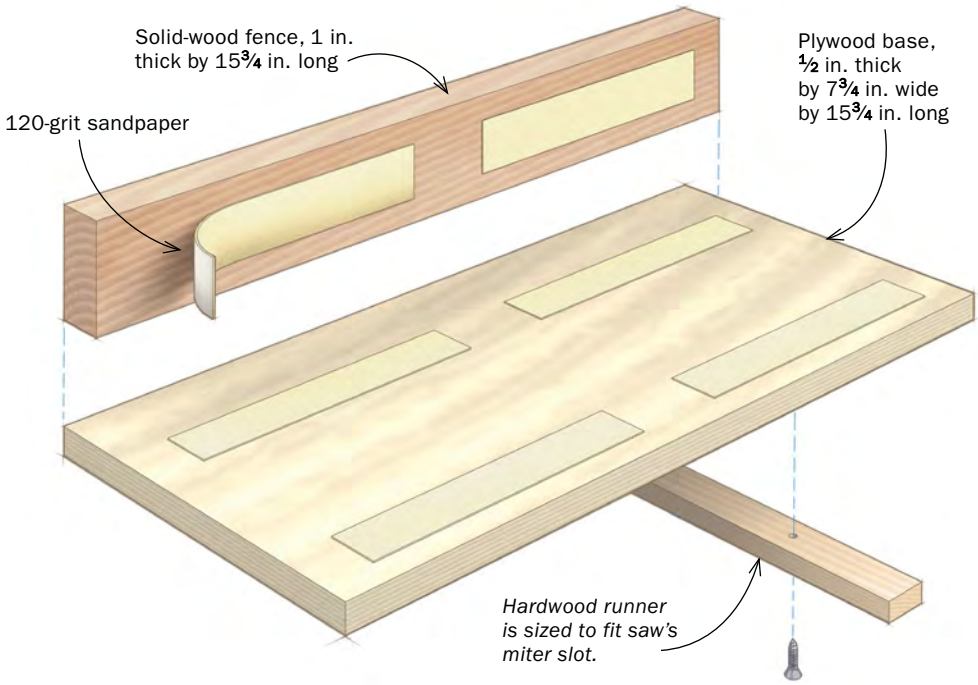
Precise Dovetails on the Bandsaw

Four simple jigs create beautiful joints quickly

BY MICHAEL C. FORTUNE

FOUR SLEEK SLEDS

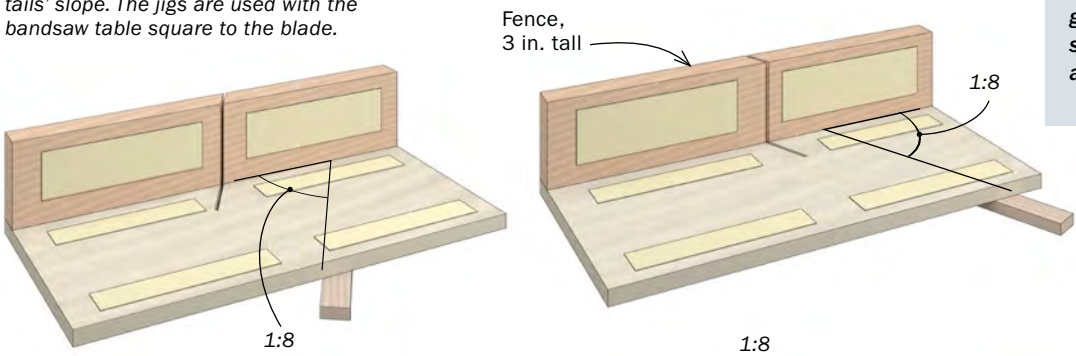
To cut perfectly mating angles on the tails and pins, Fortune uses a pair of small sleds for each. An angled runner gives the tails their slope, while angling the saw's table creates the slope for the pins.



Angle the runner. *The angle should match the slope of the tails. To prevent the runner from shifting as you screw it down, clamp a straightedge to the bottom of the base. Temporarily glue the runner snug against the straightedge using cyanoacrylate glue, and then screw it to the base (bottom).*

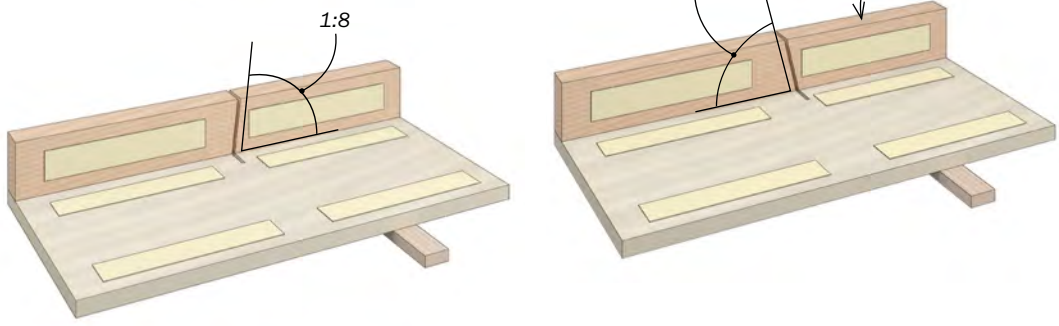
A PAIR FOR TAILS

The tail jig runners are angled to the tails' slope. The jigs are used with the bandsaw table square to the blade.



A PAIR FOR PINS

The pin jig runners are attached square to the fence. The jigs are used with the bandsaw table angled to match the tails' slope.



There must be dozens of ways to cut dovetails, but my favorite is to cut both the tails and the pins with my bandsaw. It's easy to control the angle of both parts and, because the bandsaw blade is as thin as many backsaw blades, there are few limitations to the tail's slope angle, the size of the tails and pins, and their spacing. What's more, it's fast and efficient.

I use a 14-in. bandsaw to cut dovetails. I bought this machine 44 years ago, and it's still all I really need for joinery. In addition to the saw, I use four jigs. Two of the jigs are used to cut the tails, and the other two to cut the pins. This is a wonderfully simple and accurate method for cutting dovetails.

Sleds guarantee accurate cuts

Dovetail joinery works because the angled tails fit into mating angled sockets in the pin board. Cutting the joint is greatly simplified if you can cut the tails at a consistent

Drawings: Dan Thornton

Tails first

Two angled jigs present the tail boards to the blade. A zero-clearance kerf in the jig's fence makes it easy to locate cuts accurately. To speed up the process, Fortune gangs up tail boards.

SET UP

Mark tails on just one board. *When cutting the tails, you will gang up all boards that have the same width and layout, so only the top board needs layout marks.*

Set a stop. *After laying out the baseline on a piece of scrap, cut to it and leave the jig in place. Clamp a rounded stop against the jig's leading edge, touching the kerf. Use a C-clamp, as the saw's vibration can work an F-style clamp loose.*

angle, and then cut the cheeks of the pins at the same angle. One advantage of the bandsaw is the ease of controlling that angle no matter how many individual joints you are making. All it takes is a pair of jigs for the tails and another pair for the pins.

Both sets of jigs have a plywood base with a fence on the leading edge that's square to the blade. They also all have a wooden runner. I register the jigs in the miter slot rather than against the fence, because the jig then has a zero-clearance kerf that helps you locate cuts accurately.

The runner on each pin jig is square to the jig's fence, but the runner on each tail jig is angled. This angle should match the slope of the tails. When you attach the runner, use the base's front edge as a reference surface for the bevel gauge.

After you've made all four jigs, cut a zero-clearance kerf into each one, and they're ready for use.

Stack the tail boards. *Tack the boards together with hot-melt glue.*

Photos: Matt Kenney

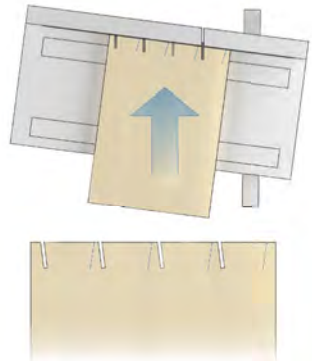
CUT THE TAILS

Cut all the tails at once

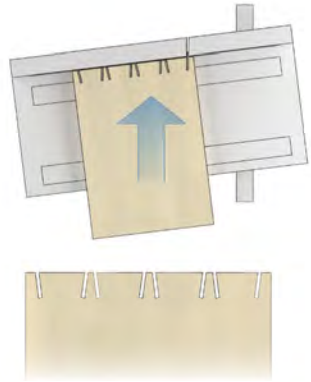
Unless you're using a router and dovetail jig, cutting dovetails always boils down to the same process: Lay out the tails (or pins first, if that's your preference), cut them, clean out the waste, transfer them to the pin board, cut the pin cheeks, get rid of the waste, and pare the pins to fit the tail board. My bandsaw-based process is no different, except that I can cut pins that fit without paring.

There is an advantage to my technique when it comes to layout: Tail boards of the same width can be stacked together and cut at once. This means that you only need to lay out the tails on one part, and put it at the top of the stack. I've cut as many as four drawers' worth of sides at once. However, you should still use a marking gauge to cut the baseline on all the parts, as well as an extra part of the same width.

This extra part is used to set a depth stop on the bandsaw so that every cut you make is guaranteed to stop exactly where you want it to: at the baseline. To set the stop, place a tail jig on the bandsaw. Put the extra part on the jig and cut into it until



First side. *Fortune begins with one jig and cuts that side of all the tails.*



Second side. *After switching to the second jig, angled in the opposite direction, cut the second side of all of the tails.*

Online Extra

For a video of Fortune setting up the bandsaw for precise cuts, go to **FineWoodworking.com/270.**

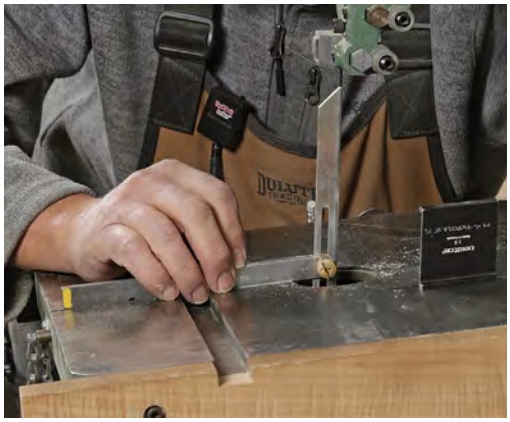
Cut out the waste and clean up the baseline. *Fortune makes multiple cuts freehand to remove the waste, using the stop so that he doesn't cut beyond the baseline. Then all that's needed is a bit of paring with a chisel. The guide ensures that the chisel is perpendicular to the part's face.*

Perfect pins

Take advantage of the jig's zero-clearance kerf and cut right to your layout lines. The pins should slide tightly and fit perfectly into their mating tails.

SET UP

The most important step. *When transferring the tails to the pin board, Fortune moves the tail board just a hair (1/128 in.) past the pin board to get a tight-fitting, gap-free joint. This way the tails will be slightly larger than the sockets.*



Angle the table. *Using a bevel gauge set to the angle of his dovetail gauge, Fortune fine-tunes the angle of his bandsaw table to match the slope of the tails.*

you're just shy of the marking-gauge line (1/64 in.). Turn off the bandsaw. Now clamp a stop with a rounded nose to the bandsaw's table, with the nose set against the jig's fence. The rounded nose is necessary because the two tail jigs are angled in opposite directions. The rounded nose touches right where the bandsaw cuts, so you get the same depth of cut with both jigs.

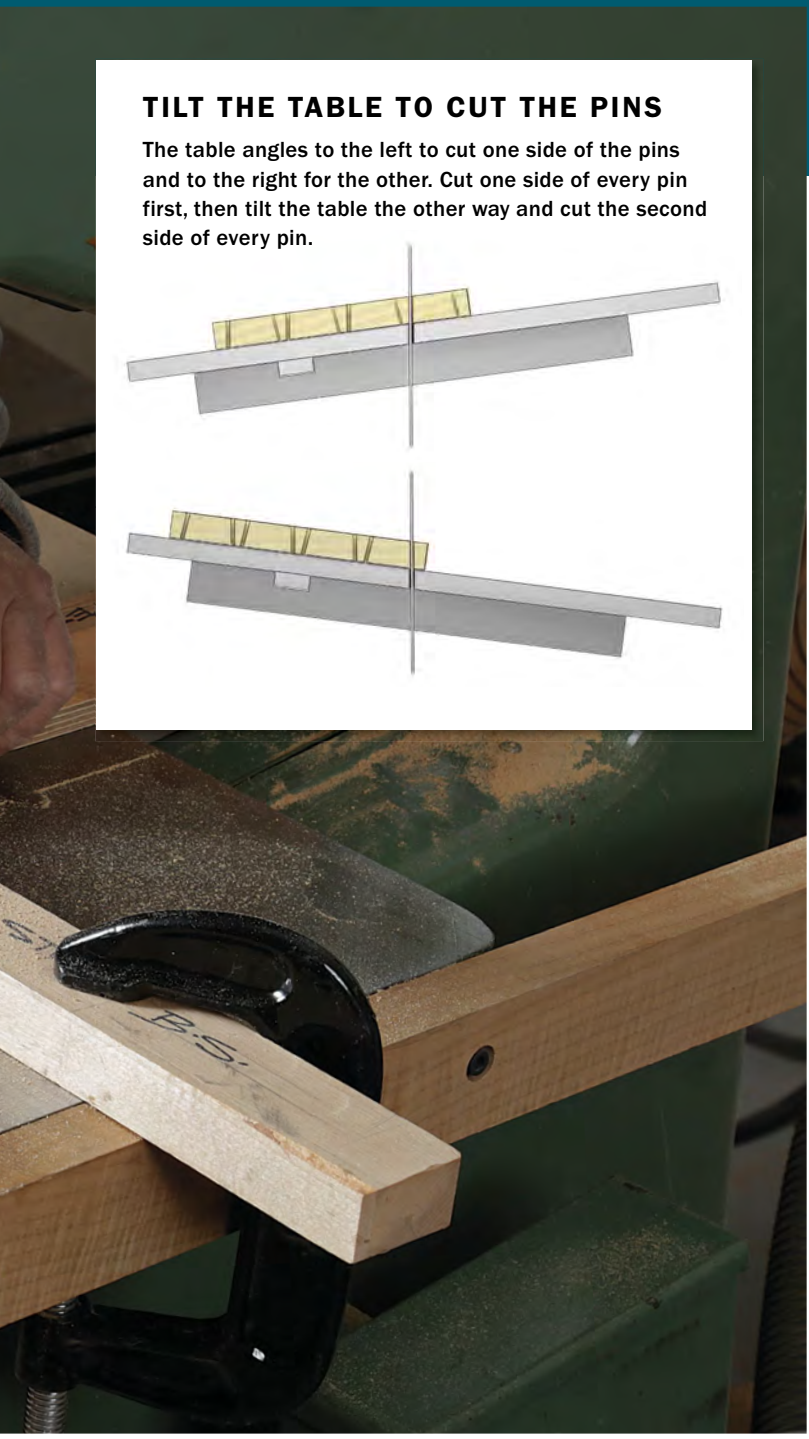
With the stop set, you can cut the tails. Each jig cuts just one side of the tail, and it doesn't matter which side you cut first. Pick a jig and get to work. Just be sure to align your layout lines with the zero-clearance kerf in the jig. After you've cut that first side on all of the tails, switch to the second tail jig and cut the other sides. I use the bandsaw to nibble out the waste between the tails, but you can use any method you want.

Pins fit right off the saw

After paring to the marked baseline, transfer the tails to the pin boards. You must transfer each tail board to its mating pin board, and then cut the pin boards one at a time. Before you begin you must angle the bandsaw's table to match the slope of the tails. I use a bevel gauge to get it to the right angle. The table angles left for one of the pin jigs, and right for the other. So, just as you did with the tail jigs, you'll cut the same side of every pin first,

TILT THE TABLE TO CUT THE PINS

The table angles to the left to cut one side of the pins and to the right for the other. Cut one side of every pin first, then tilt the table the other way and cut the second side of every pin.



then switch sleds (and readjust the table) and cut the second side of every pin.

If you transferred the tails carefully, your pins will fit straight from the saw, because the jigs have a zero-clearance kerf. Just remember to align the layout mark right next to the kerf, not in it.

After you've cut all of the pins, cut out the waste between them, then pare down to the baseline. At this point the joint normally comes together for me, but if it is a bit tight, pare the pins until they fit. □

Michael Fortune is a contributing editor.

First tilt cuts right side. *Cut to the baseline scribed on a scrap, and then clamp the stop against the jig's leading edge. Cut the right side of all the pins on one board, then work through the other pin boards.*

Change the tilt to cut left. *To cut the second side of the pins, angle the table in the opposite direction, again using the bevel gauge so that the tilt matches the tails' slope.*

Trim between the pins. *Fortune uses his chisel guide when paring the baseline. Because he transferred accurately, the cheeks do not need paring.*