My Favorite Dovetail Tricks

Five ways to increase accuracy and reduce the time it takes to execute this hand-cut joint

BY CHRISTIAN BECKSVOORT

Several years ago I contributed to an article, along with Tage Frid, that argued the merits of cutting pins or tails first (*FWW* #116, pp. 81-86). Frid prefers pins first; I'm a tails-first guy. But ultimately, as I tell my students, it matters little which part you cut first because once the joint goes together, no one can tell the difference. Over the years I've been building furniture, I've cut thousands of dovetail joints by hand, and during that time I've developed a number of tricks to make the job faster and easier. These are my five favorites.

Christian Becksvoort makes custom furniture at his shop in New Gloucester, Maine.

1 Cut two pieces at once

One of the reasons I think it's more efficient to cut the tails first is that you need to lay out the dovetails on only one piece, then use those marks to cut the tails on two pieces at the same time. And when you transfer those longer layout lines across the end grain of two workpieces and use the lines to sight your saw, you get a more accurate cut. Also, when you cut two pieces at the same time, such as two drawer sides, the resulting joints match visually. So whether you are cutting case parts or drawer sides, lay out the tails, clamp the two workpieces together, and save yourself some time.

Mark the layout on the face of only one piece. *Use a chisel to mark the cutouts where the pins will go, then use the same chisel to chop out the waste.*

Transfer the tail marks. *Use a pencil and a small square to lay out the tails across the ends of a pair of drawer sides.*

Make the tail cuts in both workpieces. *By cutting the tails in both pieces at the same time, it's actually easier to maintain the sawkerf at 90° to the face of the boards.*

Photos: William Duckworth

2 Use alignment blocks when marking drawer parts

Spacers for alignment. *Becksvoort keeps a small box of spacers handy. He records the thickness on each one (to three decimal points), and finds one that fits snugly into the grooves for a drawer bottom.*

Have you ever dovetailed a drawer, glued it up, fitted it to the opening, and found that everything looked great until you slid the drawer bottom in place and discovered that the front and side grooves weren't aligned? I've done that, and learned from my mistake. Now I cut the bottom grooves first, using the tablesaw, before I lay out dovetails and cut and chop the tails on the side pieces. To transfer the tail cuts onto the drawer front, I use an alignment spacer made of a small block of hardwood (usually cherry). I keep a bunch of spacers on hand, about 1 in. wide by 2 in. long, machined to different thicknesses, and choose the one that fits best in the grooves I've just cut. The spacer should slide into the groove and stay put. I push it into the groove on the drawer front so that it projects about ¼ in., and then place the drawer side onto the spacer, which makes the bottom grooves align perfectly. I mark the dovetail pins with a slim knife, finish cutting all of the joints, and voilà, all of the drawer pieces align perfectly when the bottoms are slid into place.

The spacer registers the parts precisely. *By locking the sides to the front (above) and back (below) with the bottom spacer, pins will mate with the tail cuts perfectly. Becksvoort uses cherry for most of his spacer blocks because it's stable.*

3 Adjust the fit with graphite marks

If your dovetails are too loose, keep practicing; if they are too tight, no problem. If the knife marks are still there, or there is a substantial amount of wood on the waste side of the knife mark, you'll have to remove the bulk of it first, just to get the joint to engage. Once the joint starts to engage, here is a trick that I've used for years to find the places that bind. I mark the bottoms of the tails with a pencil. Then I put the workpieces together and assemble the joint as far as it will go, pound it firmly with my fist, and then take it apart. The graphite will rub off on the tight spots on the pins, indicating exactly where I still need to remove some material. I carefully shave away the pencil marks with a chisel, shaving from the top if the grain is parallel to the length of the pin, or shaving from the inside or the outside if the grain runs in the other direction.

Mark the leading edge of all of the tails. *A soft (#2) pencil works best.*

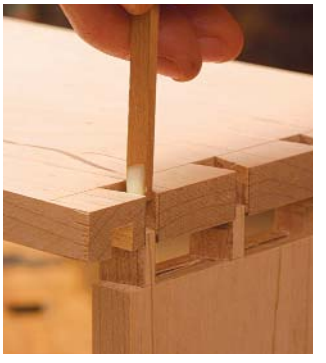
Test the fit. *Use your fist to engage the two workpieces, and then pull them back apart.*

Shave off the excess with a chisel. *The graphite left on the sides of the pins will tell you where you still need to remove material to get the joint to fit perfectly.*

4 Get corners started before adding glue

Glue sticks galore. *Becksvoort keeps a supply of small sticks on hand. Dipped in glue, the sticks make it possible to get adhesive into all the crevices of the dovetail joints.*

Gluing up a small drawer or box usually is not a problem. However, unless you have as many arms as an octopus, gluing up a blanket chest or even a large drawer can be intimidating. First of all, you can stack the odds in your favor by dry-fitting all four corners and getting your clamps and clamp pads ready. Also, remember that polyvinyl acetate (white) glue gives you a longer open assembly time than aliphatic resin (yellow) glue. I much prefer yellow glue, though, so I developed a strategy to reduce the stress of glue-ups. I partially assemble all four corners, engaging each only about ⅛ in. Then, using a square-ended glue-spreading stick (cut off the end of a popsicle stick, or make your own), I spread glue on all face-grain cheeks of both tails and pins—all four corners, all the way around the piece. Finally, I pound the corners home and clamp the parts together—done.



Engage the joints before adding the glue. *Get all four corners started before applying the glue. Then work quickly to apply the adhesive to all mating surfaces.*

5 Keep the clamp pads simple

Use pine for clamp pads. *Becksvoort prefers to use scraps of pine to protect the drawer cases from being damaged when clamping pressure is applied during glue-up.*

I once taught at a place where another instructor told students that they should make corner clamping cauls, or pads, with cutouts similar to finger joints that would fit around the ends of the pins that protrude slightly. He said you needed those spaces in the clamp pads to pull the dovetail joints together properly. I humbly disagree. I don't waste a lot of time on something that is not part of the finished piece—especially something that will be discarded when the clamping is done. Instead, for clamp pads I use a scrap of white pine the length of the joint, by whatever thickness and width is handy. I find that the end grain of hardwood pins always digs into the softer pine, even the end grain of pine—it's no contest. So, unless you want to kill a lot of time, forget the tedium of making elaborate clamping cauls, and just use a strip of pine to clamp the dovetail joints together.

Apply pressure evenly from all sides. *Use spring clamps to hold the clamp pads in place, then use the bar clamps to pull the joints together. Indentations left in the pine clamp pads indicate that they did the job to bring the drawer pieces together tightly.*