

Folding Outfeed Table

Spacing-saving mobile support can handle big jobs too

BY STEVE FIKAR

After 40 years of moving around—thanks to military life and job commitments—my wife and I settled down on Florida’s Gulf Coast and finally built our dream home. That home includes the woodshop I’ve been designing for decades, filled with all of the ideas I’d saved.

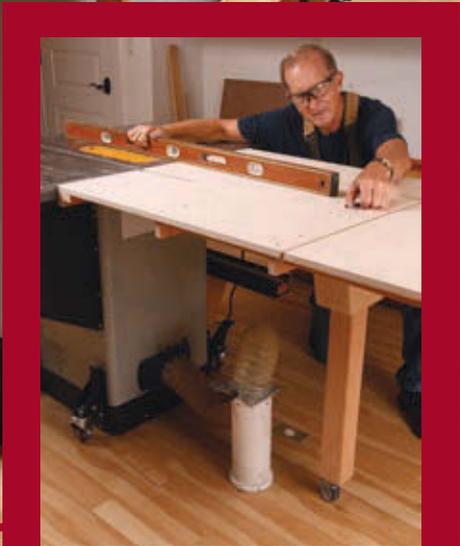
Although my shop is dreamy too, it has a somewhat small floor plan, which puts a premium on space and mobility. But I’m an engineer by trade, and I enjoy opportunities for problem solving. Here I’ll show you how I solved my outfeed table problem.

While a large outfeed table is nice to have and adds another large work surface to the shop, I needed one with a small footprint for daily use. I came up with a compact design that packs a big punch—thanks to a folded extension that flips up in seconds to support workpieces up to 10 ft. long.



Compact, mobile, and adjustable. This outfeed table flips up for long workpieces, rolls along with a mobile saw, and adjusts for uneven floors. For the vast majority of work, the extension table stays down, saving valuable floor space in compact shops. With the extension table flipped up, the outfeed table supports boards up to 10 ft. long.

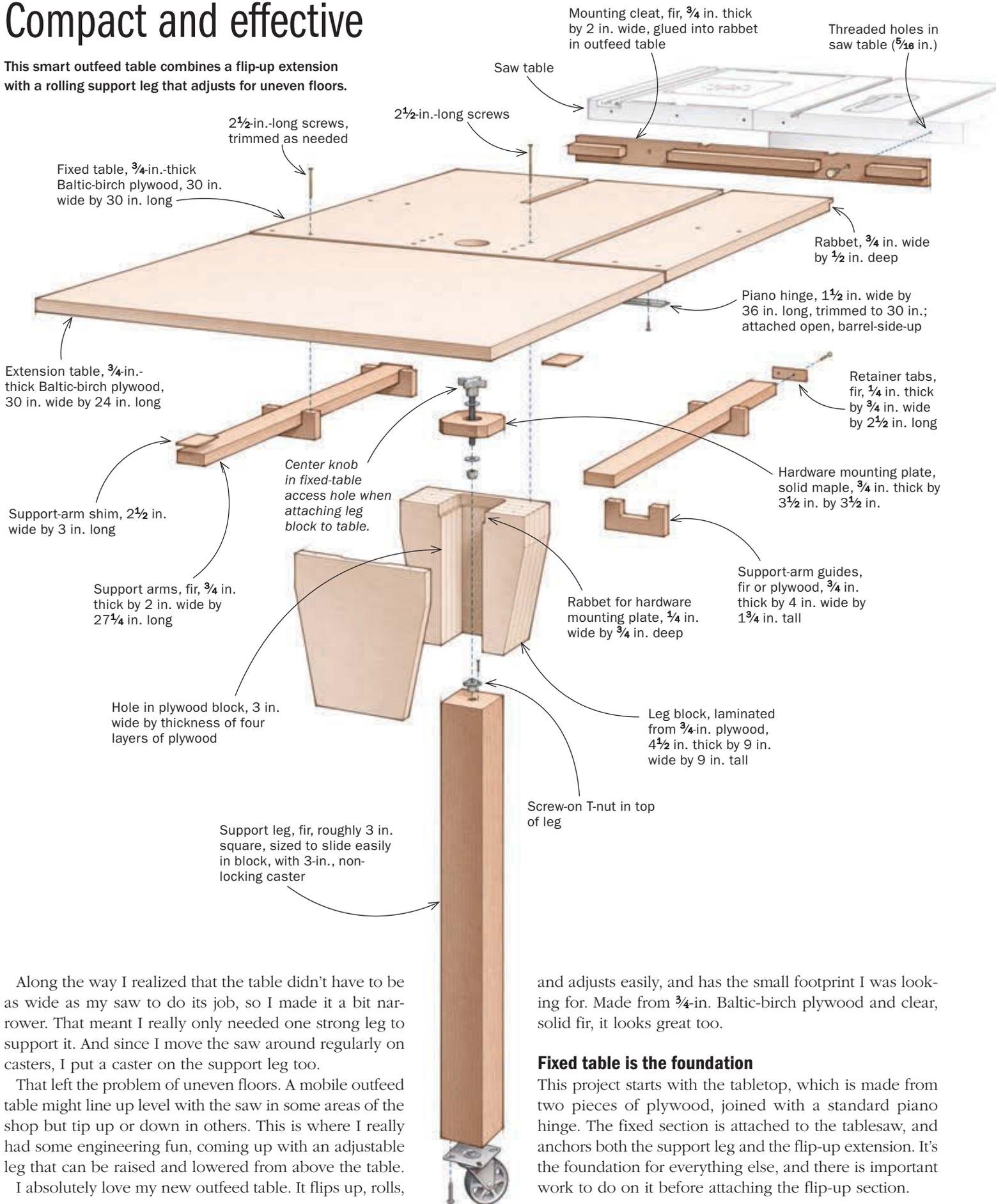




Easy height adjustment. The sturdy support leg can be adjusted from above the table to compensate for uneven floors, as well as for mobile bases that raise and lower the saw.

Compact and effective

This smart outfeed table combines a flip-up extension with a rolling support leg that adjusts for uneven floors.



Along the way I realized that the table didn't have to be as wide as my saw to do its job, so I made it a bit narrower. That meant I really only needed one strong leg to support it. And since I move the saw around regularly on casters, I put a caster on the support leg too.

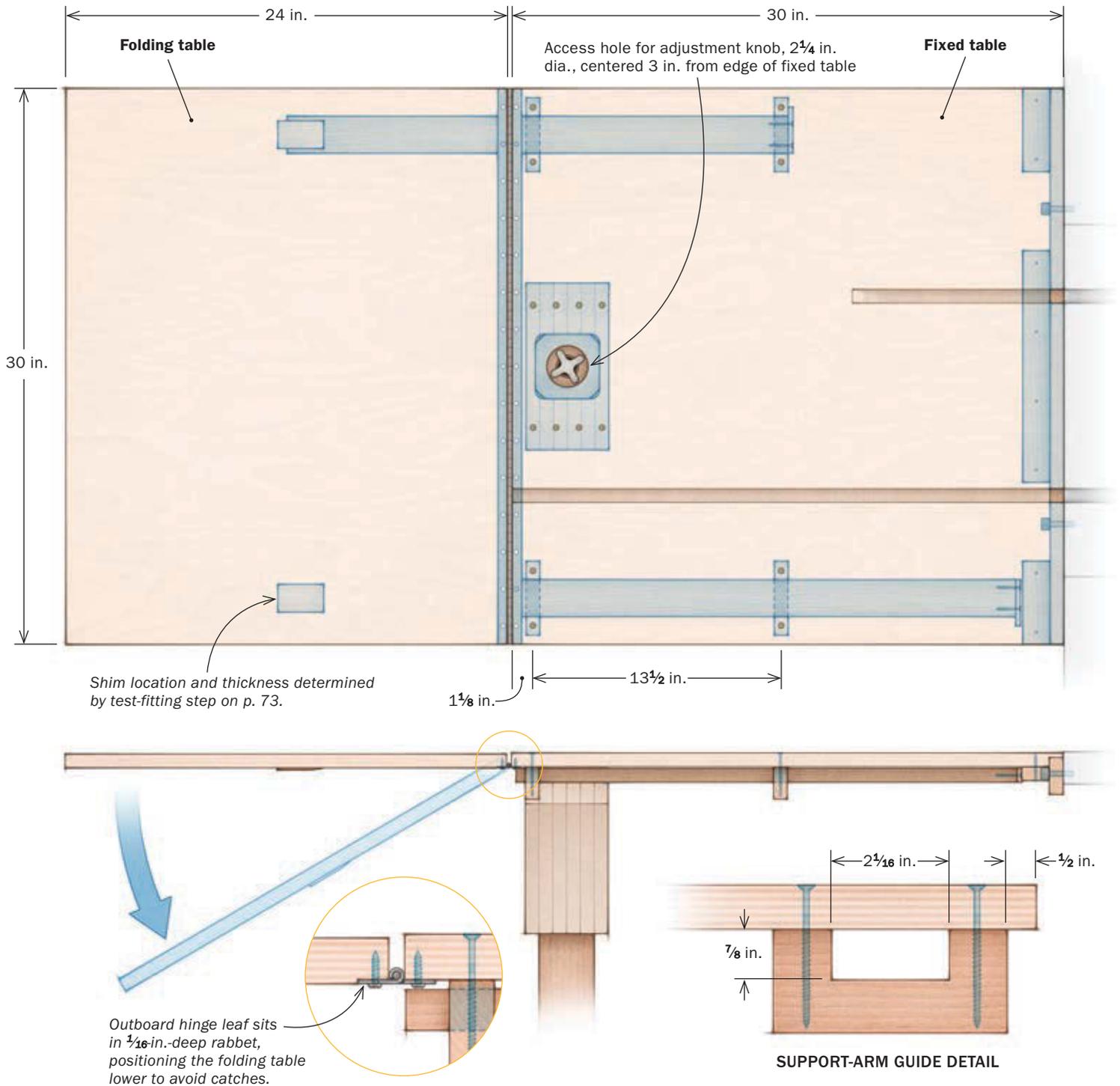
That left the problem of uneven floors. A mobile outfeed table might line up level with the saw in some areas of the shop but tip up or down in others. This is where I really had some engineering fun, coming up with an adjustable leg that can be raised and lowered from above the table.

I absolutely love my new outfeed table. It flips up, rolls,

and adjusts easily, and has the small footprint I was looking for. Made from $\frac{3}{4}$ -in. Baltic-birch plywood and clear, solid fir, it looks great too.

Fixed table is the foundation

This project starts with the tabletop, which is made from two pieces of plywood, joined with a standard piano hinge. The fixed section is attached to the table saw, and anchors both the support leg and the flip-up extension. It's the foundation for everything else, and there is important work to do on it before attaching the flip-up section.



Attach the support arms—The flip-up table is supported by arms that slide in C-shaped guides, which are attached to the fixed table. Since I made these guides from solid fir, I attached them to the tabletop with long screws that extend through their full 1 3/4-in. height, so they don't split under load. In retrospect, I could have made them from plywood for better strength in every direction.

I made the openings in the guides 1/8 in. oversize in depth to allow the support arms to clear the piano hinge. Once past the hinge the support arms run onto shims that push the extension table upward—level with the fixed half.

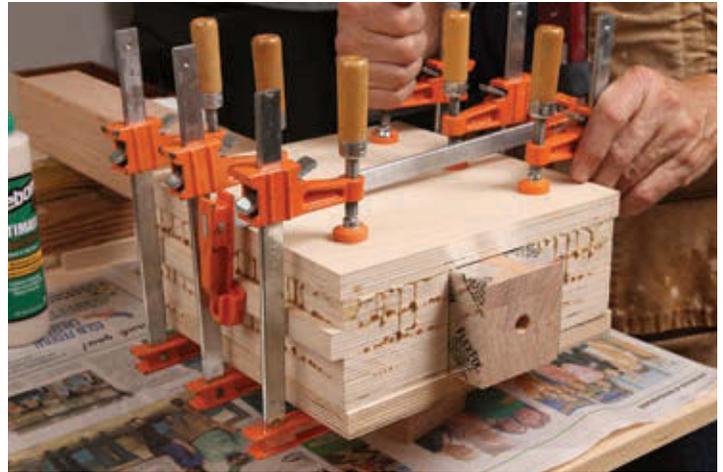
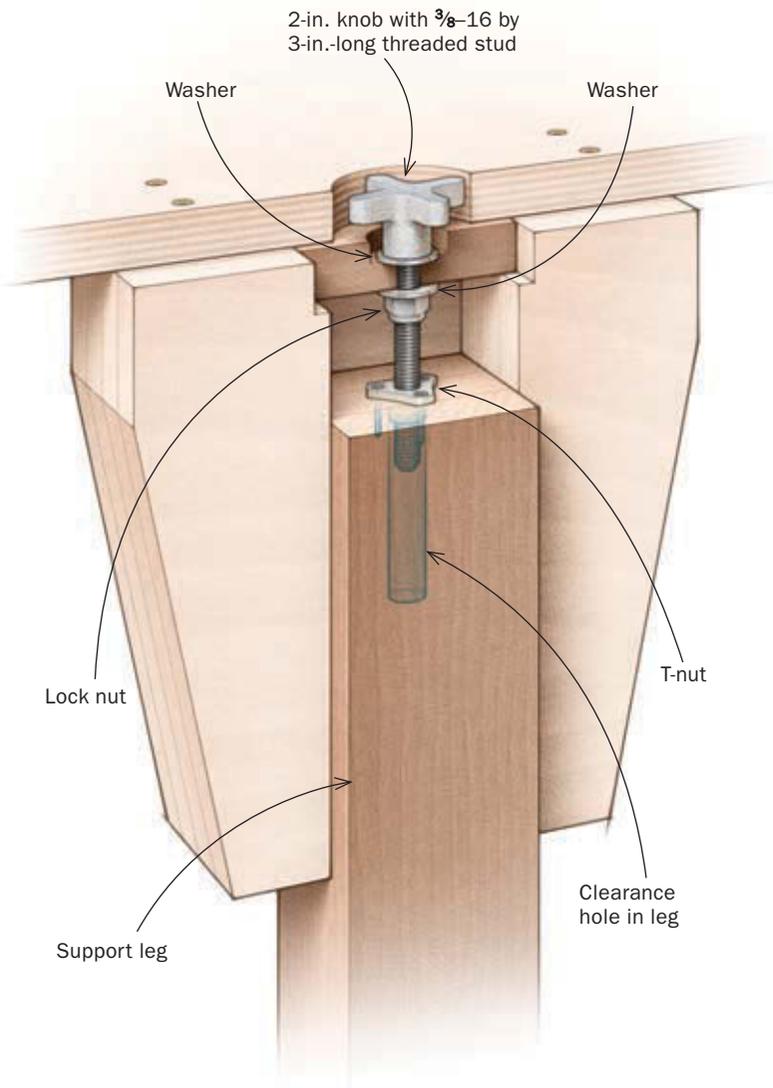
The support arms are also solid fir. Make them now, and attach the little retaining tabs at the back end that keep them from sliding out of their guides.

Make clearance slots for tablesaw jigs—To allow the guide bars on your miter gauge and tablesaw sleds to slide freely, you'll need to cut clearance slots in the outfeed table. Start by deciding where the table will mount on the saw and then lay out slightly oversize slots in the plywood.

My left-hand clearance slot extends the length of the fixed table, due to my oversize crosscut sled, but the right-hand slot is stopped at the end of the miter gauge travel. I cut the slots with a dado set,

A clever adjustable leg

1. MAKE THE BLOCK



Build up the leg block. After applying tape to the finished leg to keep glue from sticking and create clearance for the sliding action, build up the plywood around it, gluing and clamping a few layers at a time.



Trim the block. After trimming both sides, trim the ends using the miter gauge. After that, Fikar used the bandsaw to cut tapers on both sides, smoothed those cuts, and rounded over all of the edges.

SOURCES OF SUPPLY

Threaded-stud knob, style 14, 2-in. head, four-arm grip, with $\frac{3}{8}$ -16 by 3-in. long stud, \$10, McMaster.com

Screw-on T-nut, $\frac{3}{8}$ -16, various sources

Piano hinge with holes, 0.06-in.-thick leaf, 1½ in. wide, 0.245-in. knuckle dia., 3 ft. long, \$6, McMaster.com

Caster, 3 in. dia, aluminum-spoked, non-braking, \$22, Woodcraft.com



Rabbet the top. Make multiple passes with a rabbeting bit, extending the depth each time, to cut a rabbet that fits the thickness of the mounting plate for the leg-adjustment mechanism.

2. ADD THE ADJUSTER



Add the adjustment mechanism. The hardware consists of a hand knob with a threaded stud, two washers, and a lock nut, plus a T-nut that gets attached to the top of the leg. Cut a solid piece to fit into the rabbet, then center a hole in it for the threaded stud. To ensure proper alignment, the T-nut hole in the leg is centered in both dimensions.

which leaves a little ramp at the end of the stopped one, making it easy to brush out sawdust.

Adjustable leg is fun to build

The most time-consuming part of construction is the adjustable leg assembly, but it's fun to build, and well worth the effort.

The support leg needs to be sturdy. I laminated it from solid-fir boards and built up a thick plywood block around it, which attaches to the underside of the fixed table near the hinge.

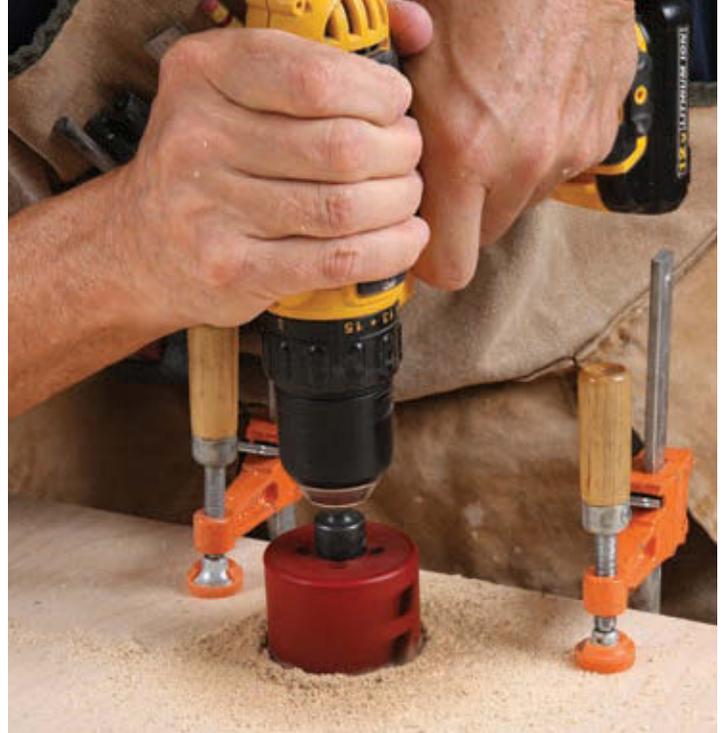
I created the big channel in the block by arranging six plywood layers around the leg as I glued them together (see photos, opposite page). Start with the leg around 3 in. square, and then take light passes in the planer until the leg is a hair thinner than four layers of plywood, so it will slide freely in the block without wobbling. Then chop your plywood pieces to size, and arrange them around the leg as you glue them together, as shown.

Afterward, I trimmed the block on the tablesaw to clean up the rough edges, bandsawed a taper on both sides for good looks, and then sanded it and rounded the corners with a router bit.

Before mounting this big guide block, you need to insert the adjustment assembly that gets trapped at the top and connected to the leg. I created that mechanism by attaching a clamp knob and threaded stud (for part details, see Sources of Supply, opposite) to a solid mounting plate, and then rabbeting the top of the guide block to accept it.

The threaded stud screws into a T-nut attached to the top of the leg, raising and lowering the leg as needed. Use the type of T-nut with holes that let you screw it into the wood, which will keep the leg attached if you pick up the table for some reason. If you center the clamp knob in its mounting plate, and center the

3. ATTACH IT TO THE TABLE



Drill the access hole. Use a hole saw to cut the 2¼-in.-dia. access hole through the tabletop.



Attach the leg block. With the adjustment mechanism trapped in the top of the leg block, just center the clamp knob in the access hole to align the block. Clamp the block so its wide side is parallel to the end of the table, and then drive in 2½-in. screws from above.

Assemble the outfeed table

Cut the miter-gauge slots. Mark the slot locations on the end of the table, and then use a dado blade to cut the slots. For slots that don't need to run the entire length of the table, clamp a stop block to the rip fence to limit the cut.



Insert the adjustable leg. Lay the table on a work surface, in this case the tablesaw itself, and thread the leg into the block.

T-nut in the top of the leg, they'll line up perfectly with each other.

The last step before attaching the big leg block is cutting a large hole through the fixed table for access to the adjustment knob. I used a hole saw and a hand drill. After that, lining up the block is as easy as clamping it to the underside of the table with the adjustment knob centered in its access hole. Then you can drive long screws down through the tabletop and into the block.

Attach a nice-looking, 3-in. caster to the leg, then push the leg up into its channel until the adjustment bolt threads into the T-nut in the top of the leg. Now the table is ready to roll.

Table attachment varies by saw

The way you attach the fixed table to your saw table will depend on the saw. Mine has two threaded holes on its back edge, which made it easy to attach the outfeed table solidly with a simple mounting cleat (see drawing, p. 68). To make the table easy to detach in a pinch, I attached it using knurled-head thumbscrews, which you tighten by hand. I leave them a little bit loose, to allow the table to flex up and down as it rides over uneven floors.

Other saws have an L-shaped rail at the back edge that creates a nice lip for attaching the outfeed table.

Whatever attachment method you use, set the outfeed table below the saw top by $\frac{1}{16}$ in. or a bit less. And make sure it can't rise off its mounting points. With just one leg supporting the end, both points must be fixed.



Add the extension table. The barrel of the piano hinge faces toward the top of the table, separating the two tables slightly, and there is a $\frac{1}{16}$ -in.-deep rabbet in the extension side, designed to lower that table, so boards don't catch on its edge.

Mount and level the table



Attachment depends on tablesaw design. Fikar's saw has threaded holes at the back edge, so he added a cleat to the outfeed table to let him use those. He used attachment bolts he can turn by hand.

Now you're finally ready to attach the folding section of the table. I used a 3-ft.-long piano hinge, cutting it down to the 30-in. length I needed. I attached it in the open position with the barrel facing up. I also cut a shallow rabbet in the folding section, inseting the hinge slightly on that side. This means that in use the folding section will sit a little below the fixed side. Some boards curve downward, and you don't want their tips getting caught at the table transition.

Level the table and put it to use

The last step is leveling the outfeed table with your tablesaw. For the fixed section, simply adjust the support leg. I do this whenever I move the saw, and it only takes a few seconds.

Leveling the folding table with the fixed one takes a few extra minutes, but it's a one-time job. Its alignment is determined by two permanent shims—glued to its underside—that push down on the sliding support arms.

To figure out how thick those shims need to be, raise the folding table, extend the arms, place a long straightedge on top, and push temporary wedges under the arms until the folding side is where you want it. Mark the wedges as shown at right, and that's how thick the permanent shims need to be. Make the real shims flat, but with a little ramp at the front edge to guide the support arms into place. To attach them, just rub some glue on their top faces, stick them in place above the support arms, and pinch the table and arms with clamps.

A couple of coats of your favorite oil finish will bring the birch and fir together visually and add a measure of protection. Then your sparkling new outfeed table is ready to use. □

Steve Fikar is a former U.S. Air Force fighter pilot and a retired software engineer, who lives in Shalimar, Fla.



Adjust the leg to level the fixed table. This is easy to do anytime, using the adjustment system you just built. Fikar is using a level here, but any straightedge will do.



Add a shim to level the folding table. To clear the piano hinge, the support arms are a bit loose in their guides; shims under the extension table will lift it level. To figure out the thickness of those shims, extend the arms fully, slide wedges under their tips, and mark their thickness as shown when the two tables are parallel. Then mill the actual shims to that same thickness and glue them in place.