

A saw bench is a versatile addition to your shop

BY MEGAN FITZPATRICK

Asaw bench is not simply a low sawhorse; it's a completely different animal. A pair of benches makes the use of panel saws and full-size handsaws efficient and comfortable when crosscutting and ripping boards. I also use them for drilling, finishing, helping brace workpieces, sitting and standing on, and much more.

I'll show you how to build one saw bench using hand tools and home center material, but for many operations, two—and sometimes a small herd—of saw benches are required. When I make multiples I prep the stock at the same time (at least the parts I use machinery to prep), but I build them separately. There aren't any tricky setups to replicate, so I don't see an advantage to building them simultaneously.

These benches are built to fit the maker. After you have your saw bench

together, you'll trim the legs to make the top of the bench hit just below your kneecap. I'm just shy of 5 ft., 6 in.; my saw bench is 17½ in. high. If you're remarkably tall (more than about 6 ft., 5 in.), make your bench legs' rough length a little longer than shown in the drawing; if you're petite, you might want to raise the height of the braces so they remain a bit above the floor when you trim the legs to length.

Find, cut, and prep your stock

At your local home center, pick through the 2x6 white pine to find the straightest, clearest 10-ft. board available.

Typically, I recommend cutting each part as you need it, referencing off



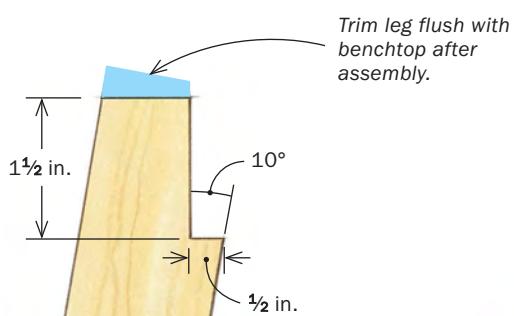
HOW TO USE IT

RIPPING With one knee on top of the board to keep it in place, begin the ripcut on the end overhanging the front of the bench. As you approach the V-notch in the top, shift the work forward to continue ripping. For longer boards, use two benches to support the work. To maintain support of the entire workpiece later in the cut, shift it back and continue cutting between the benches. If the workpiece is wide enough, saw to the side of the bench.

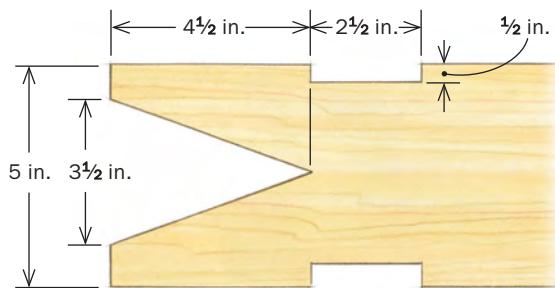
CROSSCUTTING The foot of your dominant leg should be on the floor with the board butted against the top of your shin (far left). Keep your other knee atop the work to hold it. As you approach the end of the cut, reach around with your free hand to grasp the offcut so that it doesn't break off.

WORK SUPPORT A saw bench makes an excellent surface for finishing (especially large pieces, left). You can also clamp work to a saw bench for boring or mortising; the low height makes it possible to get your body right over the work.



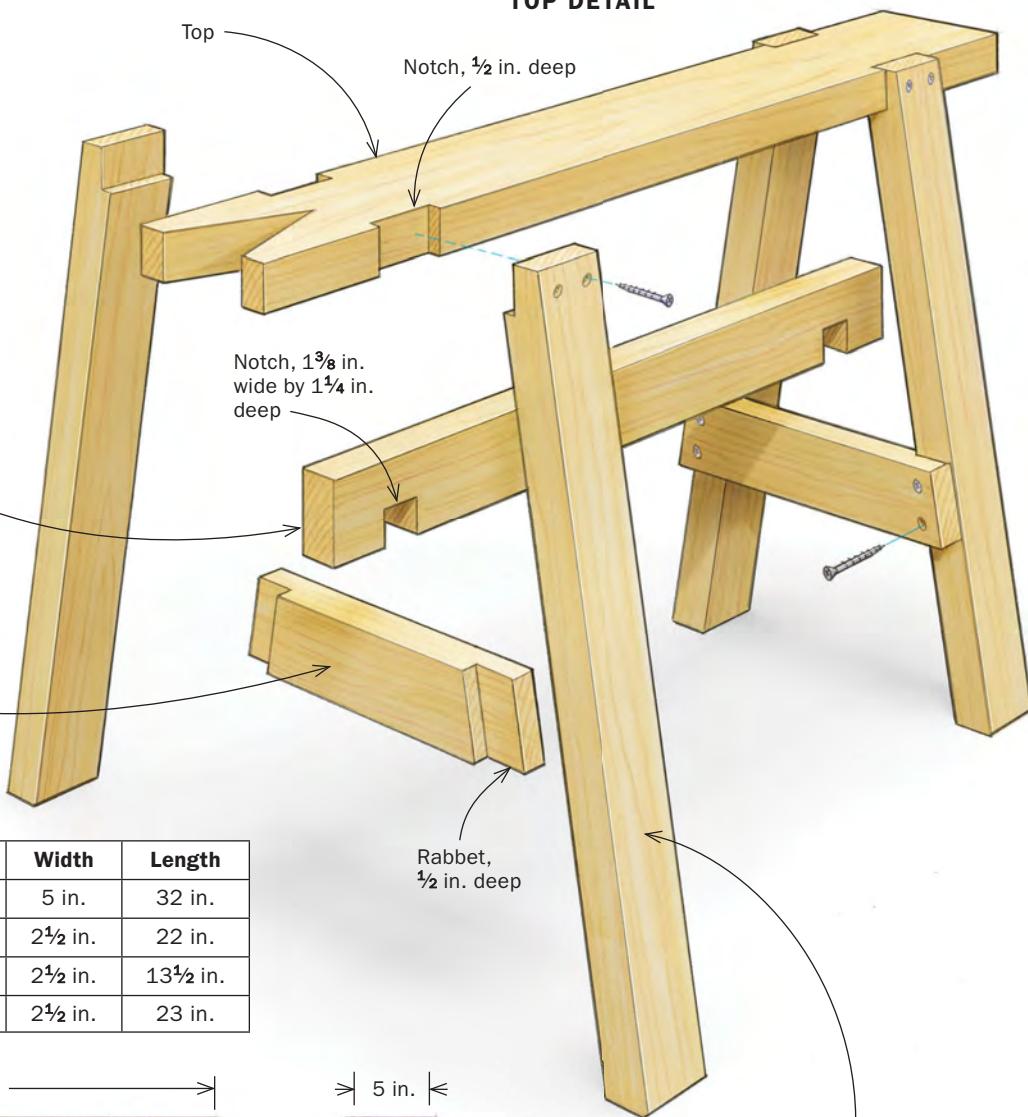


LEG DETAIL

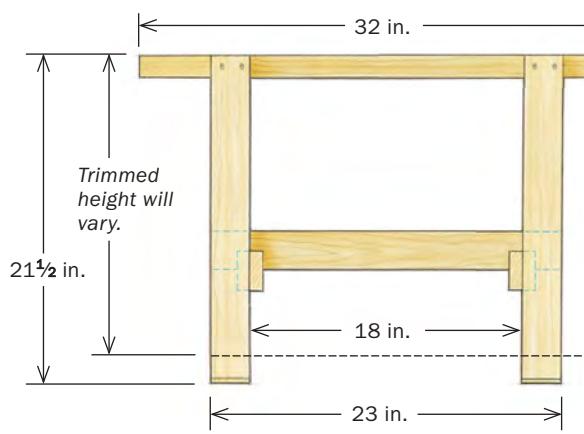


TOP DETAIL

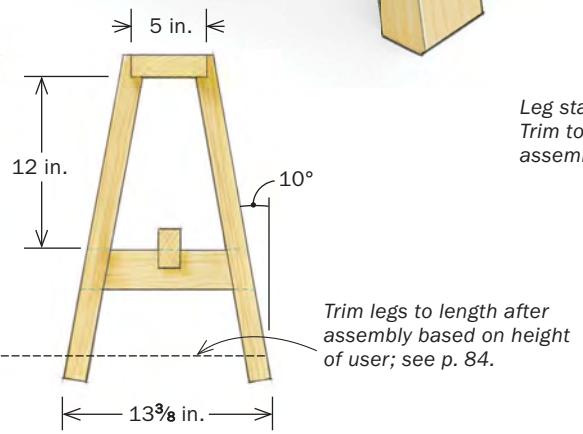
Short brace starts $13\frac{1}{2}$ in. long. Mark final length from assembled bench.



Qty	Part	Thickness	Width	Length
1	Top	$1\frac{3}{8}$ in.	5 in.	32 in.
4	Legs	$1\frac{3}{8}$ in.	$2\frac{1}{2}$ in.	22 in.
2	Short braces	$1\frac{3}{8}$ in.	$2\frac{1}{2}$ in.	$13\frac{1}{2}$ in.
1	Long brace	$1\frac{3}{8}$ in.	$2\frac{1}{2}$ in.	23 in.



FRONT VIEW



SIDE VIEW

Notch the legs

An angled half lap in the legs creates the splay when the legs are attached to the top.



Mark the cheek and shoulder cuts. With a bevel gauge set to 10° , mark a line to establish the cheek. With the gauge still set to 10° , mark a line to establish the shoulder.



Cut the cheek. Cut a shallow kerf into the end grain, then tilt the tenon saw to follow the vertical cheek line. This will help you to follow the two lines accurately as you saw.



Cut the shoulder. Deepen the shoulder line slightly with a chisel. This small trench helps to position the saw when starting the cut.



Clean up the joint. With the leg in a hand-screw clamp, align the cheek flush to the top of the jaws. Then use the jaws to guide a wide chisel as you clean up the cheek cuts. Because the cheek and shoulder are at a 90° angle, you can use a shoulder plane to clean up the inside corner.



your work. However, this project is a rare instance in which you should mark out and cut all the pieces to match the cut list before starting the joinery. That's because no one part relies on another for its finished size, and because you need the parts cut and ready for direct transfer of measurements for the joints.

Leg joinery

Flatten the least attractive side of each leg with a jointer plane, then mark it as the true face. Now plane the edges, using a square to check that they are perfectly square to the true face, and shoot the top ends to ensure that they, too, are square to the true face. The show face can be cleaned up later if you wish. All the joinery layout will be on the true face and on the square end and edges; the show face of the legs doesn't affect the joinery.

The legs get angled half laps that fit into notches in the top. To lay out the half laps, set a marking gauge to $\frac{1}{2}$ in. and scribe a line off the true face onto the top of each leg. Now set the gauge to $1\frac{1}{2}$ in., and scribe the shoulder line on each leg, registering off the top.

Both the cheeks and shoulders are angled at 10° . Set a bevel gauge to 10° and use a pencil to mark the angles. Now saw the cheeks. Use a chisel, bevel toward the waste, to make a small V-shaped notch on the corner. Set a fine-toothed ripsaw into the notch, then saw down your layout line.

Next, cut the shoulders. Drop a chisel into your marking gauge line and cut a small V-shaped trench along the joint line. Secure the leg against a bench hook on your bench, then use the trench to guide a fine crosscut saw as you saw down to the cheek. Save the offcuts to use later as clamping cauls, and clean up the cheeks.

Top joinery

Just as with the legs, with the top the true face is the side that won't show. So true up the less attractive face, mark it as true, then square the long edges to that face.

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Shape the top

Ripping notch.
Use a panel saw or full-size handsaw to cut the V of the ripping notch. Because the cuts are at an angle, either a crosscut or rip saw will work.



Mark the leg notches. Align the leg to a knifed line $4\frac{1}{2}$ in. from the end of the top, then scribe along the other side of the leg with a knife. Finish by marking the depth of the notch on each face of the top.



Next, lay out the V-shaped ripping notch on both faces at the front end of the top. Use a pencil to mark a centerline, then measure 5 in. from the front edge and make a tick mark. Measure and mark $\frac{3}{4}$ in. from both edges at the end. Connect the dots with a straightedge. Use a ripsaw or crosscut saw to cut the notch, then clean up the cuts with a rasp as necessary.

Now lay out and cut the notches for the legs. On both long edges, measure $4\frac{1}{2}$ in. from each end, then register a marking knife against a square to knife in the outside shoulder of each notch. Use the leg to locate the other shoulder of the notch. Use a cutting gauge to lay out the notch bottoms, $\frac{1}{2}$ in. from the edge. Saw the shoulders of each notch, then remove most of the waste with a coping saw, or pop it out with a chisel. Use a large router plane to clean up the bottoms.

Remember those offcuts you saved? Tape them to the top of the legs, narrow side down. Brush glue in the notches and on the cheeks of the legs, then clamp the legs in place, making sure the top is firmly seated on the shoulders. Thanks to those offcuts, the clamps should close squarely. Because the assembly is upside down, you can leave it in clamps and move on to the next few steps while the glue dries.

Add the short braces

The two short braces get lapped onto the inside of the legs, but the legs don't get a corresponding notch. True up the two short braces, and mark the true face (this time, it is the show face). The top edge of each short brace is located 12 in. from the underside of the top, so cut a 12-in. spacer block from scrap, and use that to position each brace on the inside of the legs, with the true face against the legs. Clamp the braces to the legs, and mark the braces for length with a pencil.

Register a knife against the inside face of the legs to mark out the shoulders on the braces. After unclamping and crosscutting the braces to length, set a cutting gauge to $\frac{1}{2}$ in. and mark the cheeks. Cut the cheeks and shoulders, then clean up the cheeks



Cut the notches. Use a crosscut saw to cut both shoulders of the notch. Use a coping saw and chisel to remove the waste. Then use a router plane to clean up the bottom, working into the center from each face so as not to blow out the back.





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Add the braces



Glue the legs to the top. Use the tapered offcuts from the leg half-laps as clamping cauls. Clamp the assembly upside down with the top shimmed up so the clamps will apply pressure to the center of the joint.

with a router plane and the shoulders with a shoulder plane. Glue the short braces to the legs, and clamp them in place while you cut the joinery for the long brace.

Long brace joinery

On the long brace, the true surface is not a face, but the bottom edge. So true up the least-attractive edge, then true both faces 90° to that edge.

Center the long brace end-to-end, then clamp it in position on the short braces. Use a marking knife to scribe the location of the short braces on the true edge of the long brace. Then remove the long brace to lay out the notches that join it to the short braces. Remove most of the waste with a coping saw or chisel; clean up the bottoms with a router plane.

If you want to be fancy, plane chamfers on the top edge of the long brace, cut ogees on the end, or whatever you choose. You can also do nothing here.

Nail, clean, and level

Nail in the same order that you glued and clamped; legs to top first, short braces to legs, and finally long brace to



Mark the short and long braces. With the short braces clamped in place, mark the inside edge with a knife. Use a pencil to mark the outside edges. Saw them to length, then cut the half-laps. Glue and clamp them in place, and mark and cut the notches in the long brace. Then glue that in place.

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Nail and trim the bench

Drill for the nails.

Without pilot holes, the wedge shape of cut nails or square-shanked nails could split the work.

Fitzpatrick uses diamond-head forged nails from Clouterie Rivierre, available from leevalley.com, lienelsen.com, or directly at forgednails.com.



Flush the legs to the top. A cheap pull saw works great as a flush-cutting saw on large work. Just be sure to take it to your sharpening stones to remove the set from both sides before using it for this purpose.

The right height for you. Measure from the floor to the bottom of your kneecap. Level the saw bench on a flat surface, shimming the legs as necessary. Use a scrap and half-pencil to mark around all four sides of each leg, then cut them to length.



short braces. Then, use a flush-cutting saw to trim the legs flush to the top.

Now measure from the floor to the bottom of your kneecap and note that number. Shim the saw bench level on a flat surface, then measure down from the top of the bench to the level surface. Subtract your leg-measurement number from the current saw bench height number, and cut a scrap the length of the result. Use a scrap and a pencil to mark each leg.

You don't need a finish on the saw bench. It will acquire its own with age and while finishing other projects.

Now go build that second saw bench. □

Megan Fitzpatrick is a writer, teacher, and furniture maker in Cincinnati, Ohio.