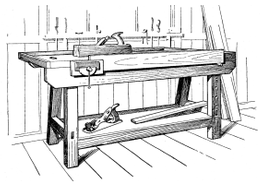
PHOTO BY THE AUTHOR

A NICE PAIR: With two traditional sawbenches you can perform a wide variety of useful tasks in the shop.

Appendix One



Build a $5.87 Sawbench

by Christopher Schwarz

Though I work with both machinery and hand tools, I consider a pair of traditional old-school sawbenches to be indispensable workshop equipment. If you make your sawbenches with sound joints and size them so they fit your body, you will use them every time you are in your shop until the day you lay down your tools.

Building a sawbench is also an excellent introduction to the fundamentals of traditional handwork in general, and sawing in particular.

But before we dive into construction, you should record one important piece of information below so you don't make a mistake when you build your pair of benches.

Measure from the floor to right below your kneecap and write that measurement here: _____.

By way of example, I'm almost 6' 4" tall and that measurement on me is 19⅝". The cutlist at the end of this chapter calls for legs that are 22" in length, which will cover just about anyone who doesn't play in the NBA. Make your benches to the cutlist, then trim off the bottom of the legs to fit your floor-to-kneecap measurement.

Materials

Our sawbench will be built using a single inexpensive white pine 2x6 from a home center. Look for the straightest and clearest board you can. Note that longer lengths will be clearer, so it might be worth a couple extra dollars to buy a 12' 2x6 instead of an 8' or 10' board.

Purchase the driest 2x6 you can find. If the surface of the board feels cool to your touch (even slightly), it's too wet. If it feels heavier than the other boards you are examining, it's either filled with water, sap or both. Best to set it aside.

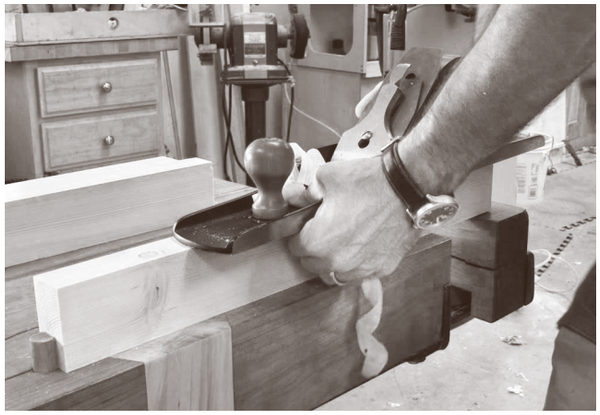
All of the stock should be cut to the cutlist dimensions and four-squared before beginning to cut the joints.

"(T)hey either find 'nothing stirring,' and literally starve awhile, or make such astonishing sums at piece work, as to set their heads a madding with the fumes of the stomach; they become broilsome, drink unaccountably, fight any body or thing, pawn their tools by scores, and, when Tuesday comes round, find themselves under the necessity of kicking the master for an advance.

"Who would be a Sawyer? Or, being one, would not work out his own reformation in time?"

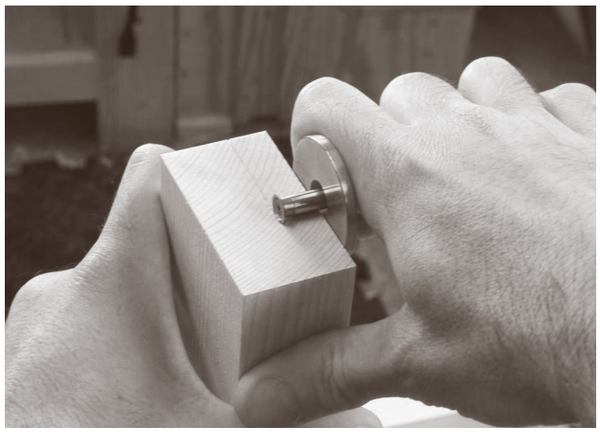
— Nathaniel Whittock
from "The Complete Book of Trades" (1842)

The Leg Joints

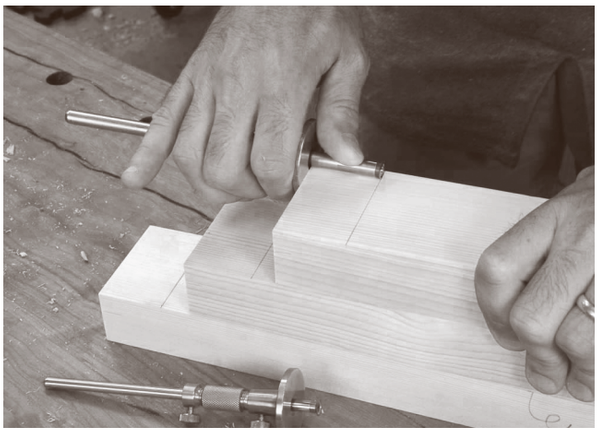


UGLY FIRST: Flatten the uglier face of each leg piece using a handplane. Mark it as your "true face." This ugly but flat surface will face the inside of the finished sawbench. Now true the two long edges of each leg so they are flat and square to the true face.

CRITICAL STEP: Confirm this with a square. This step is critical to all the parts of the sawbench coming together with ease. Don't bother squaring or dressing the show face of the leg.



SCRIBE ONE: Now lay out the top of the notch. Set a marking or cutting gauge to ½" and scribe a line off the true face.



SCRIBE TWO: Then set a second gauge to 1½" and scribe the shoulder line.

BEVELS: The cheek and the shoulder are both angled 10°. The cheek is angled 10° off 90°. The shoulder is 10° off of horizontal. Set your bevel gauge to 10° and lay out the cheek and shoulder. Use the "Leg Detail" illustration as a guide.

SECOND CLASS: Saw the cheek. This is a second-class saw cut – when accuracy is critical, but the final appearance of the joint is not. You use a knife and square to lay out a second-class sawcut. And if the cut begins on a corner, then you create a small V-shaped notch on the corner to guide the saw and make it easier to start.

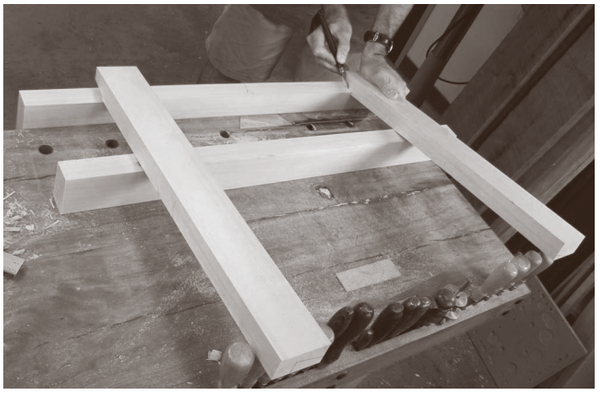
FIRST CLASS: And then the shoulder.This is a first-class sawcut – when accuracy and appearance are important. You use a knife to lay out the joint. Then you chisel a V-shaped trench all along the joint line to guide your saw. You also should restrain the work with a clamp as you make the cut. Save the waste – it's a clamping caul you'll need shortly.

CHEEKS & SHOULDERS: To true up the cheeks, secure the leg in a handscrew. Line up the face of the jaws with your knife lines and use the handscrew like a paring block with the longest and widest chisel you have. If your shoulders aren't perfect, use a shoulder plane to true them up. Remember: The cheek and the shoulder surfaces are at 90° to each other. A shoulder plane will work great.

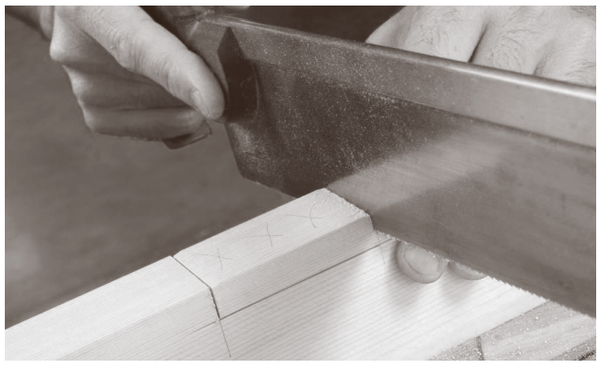
DECISION TIME: Then pair up your legs and determine which is front, left, back and right. Scrawl a cabinetmaker's triangle on the bottom of the legs.

The Top & Its Joints

A NOTCHED TOP: True up the top and mark the true face (the underside) and plane the two long edges of the top so they are square to the true face. Lay out the ripping notch using the "Top View" illustration as a guide. Use a ripsaw or tenon saw to cut the ripping notch. Then clean up the cuts with a rasp.

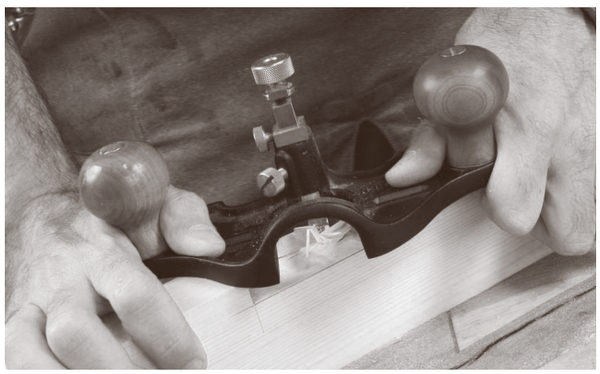


LEG LOCATION: Knife in the location of the legs. Knife in only the cut that is 4½" from the end. The other line will come directly from the leg. Place each leg in place and line up one edge with your knife line. Trace the shape of the leg onto the edge of the top.



NOTCH: Use a cutting gauge and pencil to lay out the bottom of each notch (it is ½" from the edge). (Refer to the "Leg Detail" illustration at the end of the article for layout.) Then saw the shoulders of each notch.

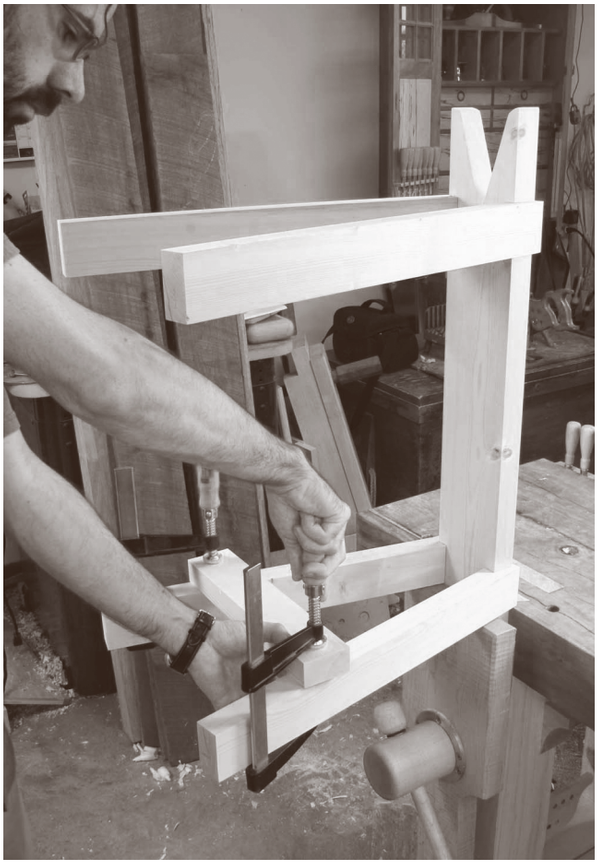
COPE: Then remove the majority of the waste with a coping saw.



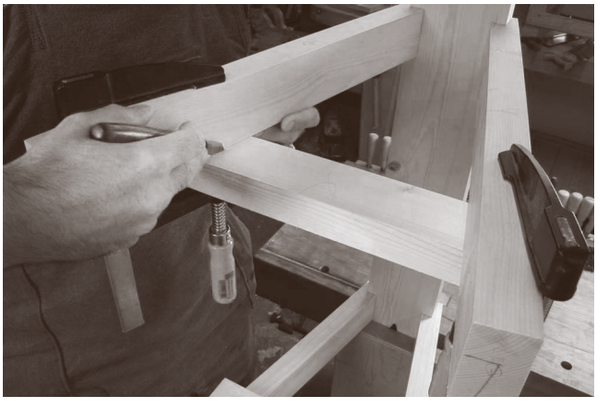
REPEATABLE DEPTH: Now clean up the bottoms of the four notches using a large router plane. A depth stop on the plane ensures that all the notches will be the same ½" depth.

CAULS: Tape the offcuts (you did remember to save them, right?) to the legs to act as cauls. Glue and clamp the legs into the notches in the top. If you positioned the cauls correctly, the clamps should close squarely across the legs and top.

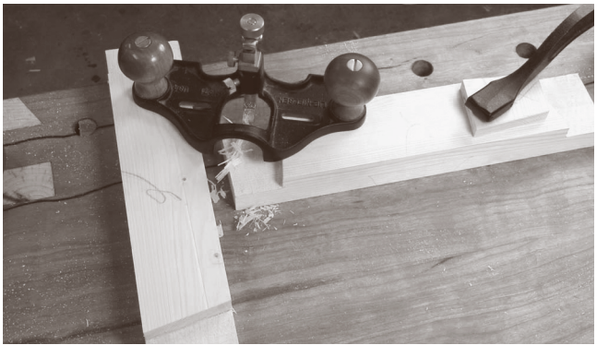
The Short Braces



TRUE FACE OUT: True up the short braces and mark each true face. This time the true face is the exterior face of the brace. The top edge of each short brace should be located 12" from the underside of the top. Clamp a short stretcher to the inside of the legs with the true face against the legs.



SHOULDERS: Now use a knife to mark the shoulders on the short stretcher. Trace along the legs to mark this shoulder. Now mark out the cheek (it's ½" in) and the rest of the angled shoulders. Cut the cheek and shoulder just like you did on the leg.



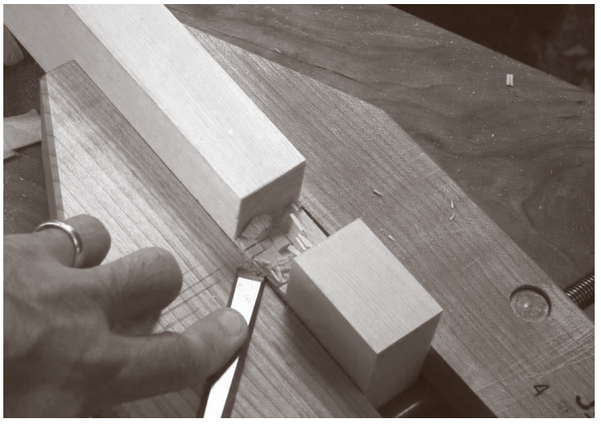
CLEAN CHEEKS: Clean up the cheeks using a large router plane. While truing up the cheeks on one brace, use the second brace to support the router plane's base. Take small bites and work down to the knife lines.

NOW GLUE: True up the shoulders with a shoulder plane. Then glue the short braces to the legs.

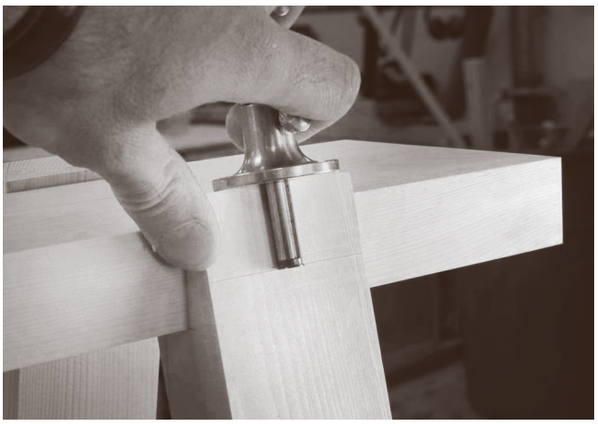
The Long Brace

TRUE FACE DOWN: True up the long brace. The true face on this part should actually be one of the long edges. Pick the uglier long edge — the prettier edge should face up. True the two adjacent faces so they are 90° to the true surface. Place the long brace in position on the short braces and clamp it down. Trace the shape of the short braces on the true edge of the long brace. Then remove the long brace and lay out the notches that will join the long brace to the short braces (refer to the "Long Brace" illustration for layout). These notches are 1¼" deep (make them deeper if you like). Saw out the walls of the notch with a carcase saw and remove most of the waste with a coping saw.

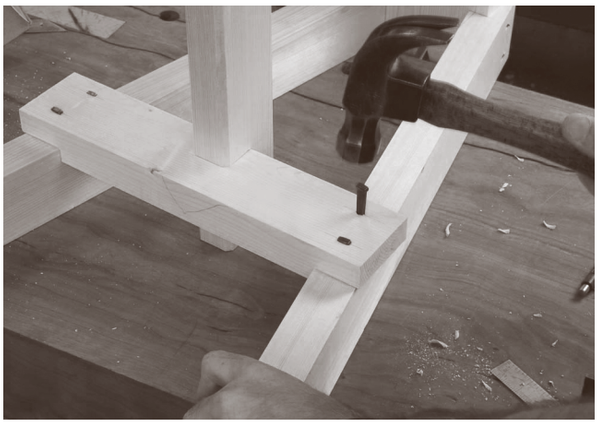
You can pare the floor of your notches freehand with a chisel, or you can clamp the brace in a handscrew and use it like a paring block. You can chamfer any edges at this point. Next you'll glue and nail the long brace in place. Drill a 3/16" pilot hole through the long brace and 1/8" pilots in the short braces (it's a stepped hole). Then glue the long brace in place, hammer 6*d* cut nails into the holes and clamp things up.



More Nails

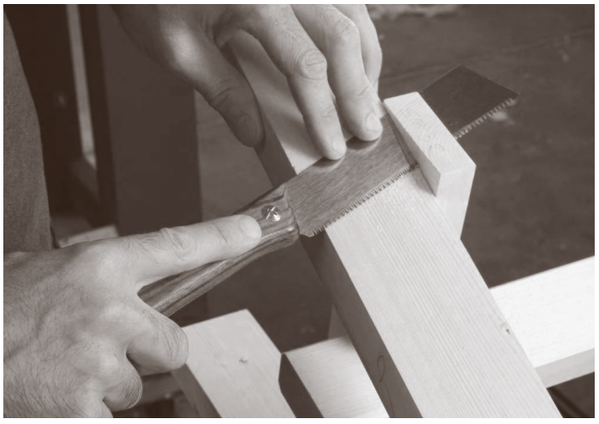


NAILS ALIGNED: Before you trim the legs and short stretchers flush, you should first drive all the nails. Mark off a line on the legs for your nails using a cutting gauge. Then drill a stepped hole for the 6*d* nail – 3/16" through the leg and 1/8" in the top. Drive two nails into each leg. Set them below the surface of the wood.

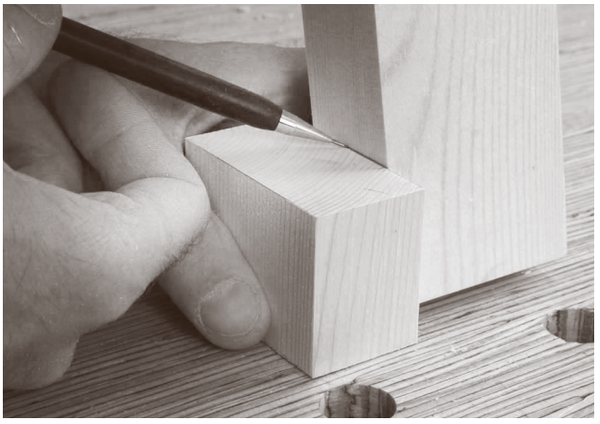


TIME TO HAMMER: Now nail the short stretchers to the legs. Two nails in each joint. Use the same procedure as you did for the other holes.

Trim & True

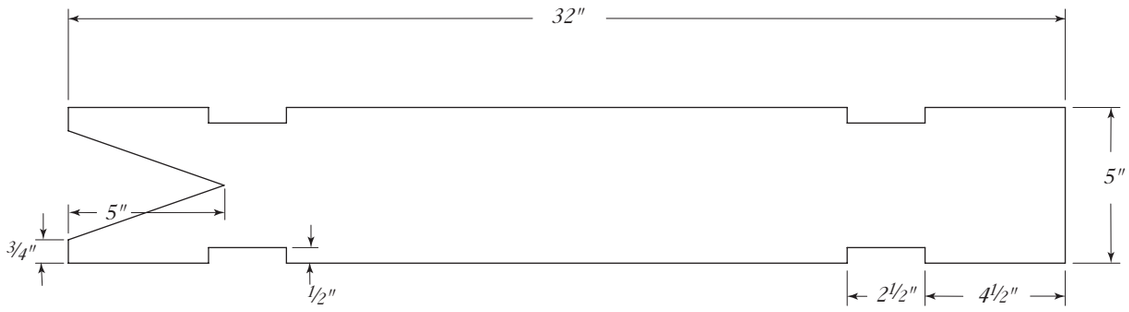


GET FLUSHED: Use a flush-cut saw to trim the tops of the legs and the ends of the short braces so they are flush to their adjacent surfaces.

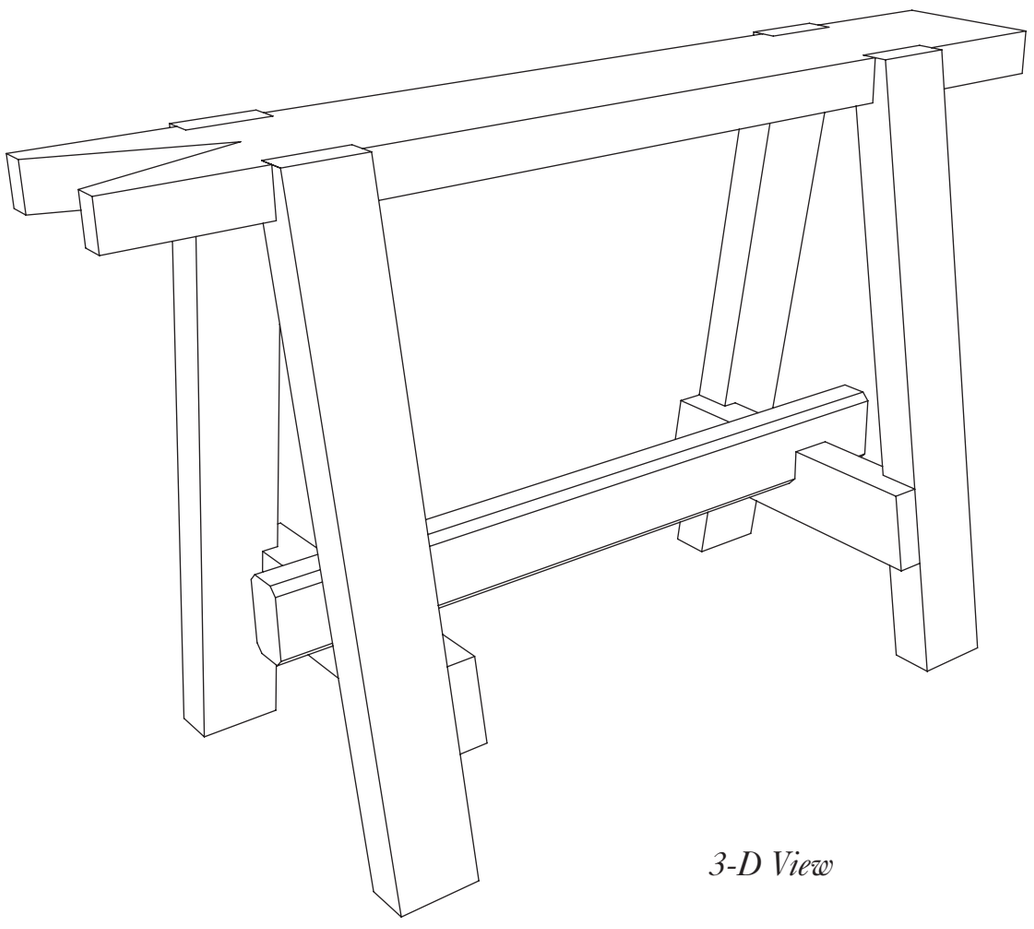


SIZE IT: Mark the legs to their final length using a scrap block (don't forget to level the sawbench on a flat surface first).

CUSTOM FIT: Saw the legs to their final length. Break all the hard edges of the sawbench and finish it with a couple coats of an oil/varnish blend.



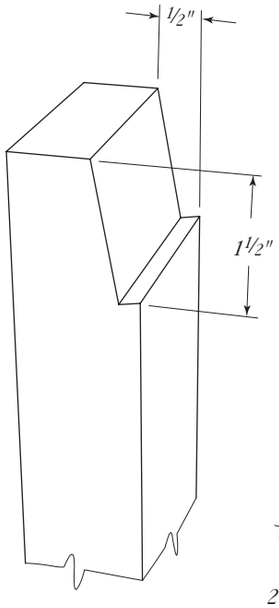
Top - Top View



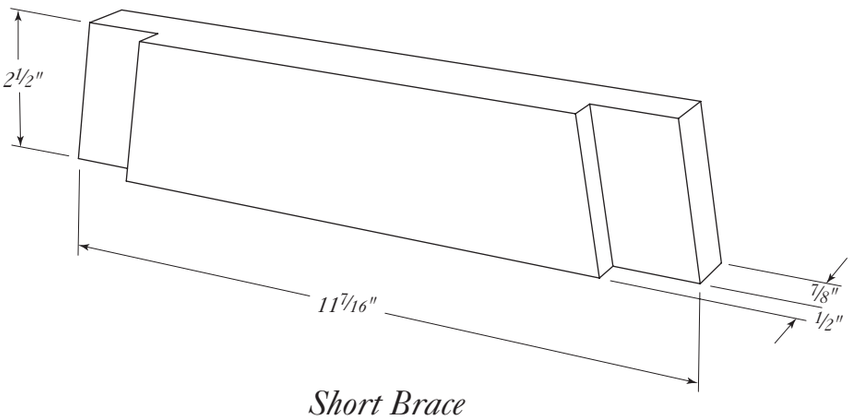
3-D View

$5.87 Sawbench

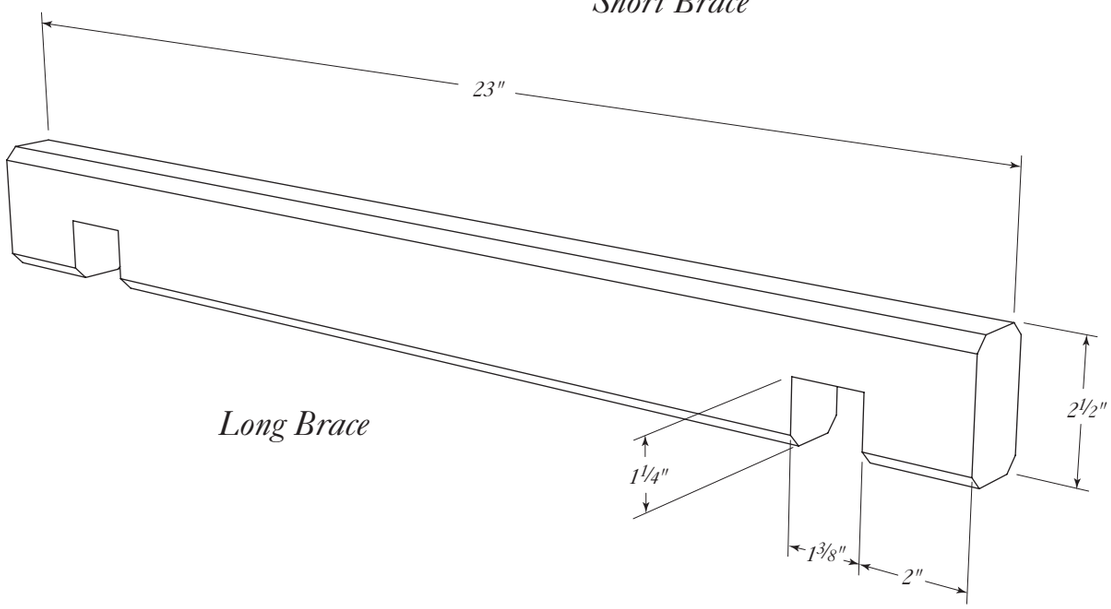
	NO.	PART	SIZES (INCHES) T	W	L	MATERIAL
❑	1	Top	1 3/8	5	32	White pine
❑	4	Legs	1 3/8	2 1/2	22	White pine
❑	2	Short braces	1 3/8	2 1/2	13 1/2	White pine
❑	2	Long braces	1 3/8	2 1/2	23	White pine



Leg Detail



Short Brace



Long Brace