BUILDING A SLIDING TABLE FOR YOUR TABLESAW
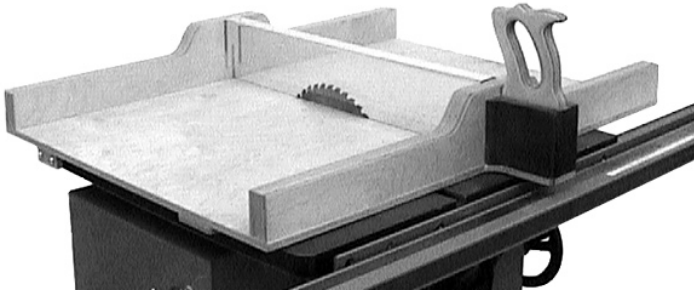

A Sliding Crosscut Table is one of the most useful accessories you can add to your tablesaw. With good outfeed support and an accurate crosscutting system, your saw will be as safe, accurate and versatile as any in the business.

Building our sliding table is easy. The list of tools & materials you'll need is quite short:

> One pair phenolic runners, included in kit
> One Lexan blade path cover, included
> 1/2" or 3/4" plywood 32-3/8" deep by 37" wide
> Plywood or hardwood 8" x 49" x 1-1/2" thick
> A dozen #8 x 3/4" flat head wood screws
> A handful of longer #8 or #10 pan head wood screws

Terms

For the purpose of these instructions, we'll identify the places and directions we're talking about as consistently as possible. While cutting wood, you stand at the front of your saw. The outfeed end of the saw is the rear. Likewise, the edge of the sliding table closest to you as you make a cut is the front; the other end is the rear. When you push material forward on the saw, you're pushing it toward the rear. When you pull it back, you're moving it toward the front.

Table Size

Our sliding table is 37" wide, 1" wider than the width of our Unisaw's cast iron surface. It is 32-3/8" from front to back, allowing 24-3/8" between the fences to accommodate full 24" crosscuts, plus a 5" tail piece for mounting an exit block. (See page 3 for a measured drawing.) It's a very versatile design, but of course you may alter the dimensions to suit your needs. If you never work with plywood or other sheet materials, you might be satisfied with relatively moderate crosscut capability, say 15" to 20". You'll want to be able to trim solid lumber and glued-up panels, but your table can be narrower, lighter and a little easier to store than our full-size general-purpose version.

Safety

Tablesaws can hurt you two ways. Involuntary injury is where the saw reaches out and touches you; it is almost always the result of kickback. The sliding table can virtually eliminate the risk of kickback during crosscutting by keeping your work firmly under control, moving precisely in the plane of the blade.

Voluntary injury happens when you reach out and touch the blade, whether through inattention or distraction. Reducing the opportunity for voluntary injury is the job of our Lexan blade path cover, stop block, exit block, and the table's handle. The blade cover, unlike some saw guards, doesn't get in your way, obscure visibility or make it difficult to carry out a cut. It cannot absolutely prevent injury; if your workpiece can reach the blade, so can you if you try hard enough. However, it will prevent your hands' easy access to the blade, and it will keep chips and sawdust from smacking you in the face too.

As you complete a cut with the sliding table, two or three inches of the saw blade will pass through the front fence (this varies with blade diameter and cutting depth.) Our design incorporates an exit block behind the fence to keep the blade covered and out of reach. Under the left edge of the table, there's a stop block to keep you from pushing the table farther than needed. Further, there's a stout, comfortable handle to make sure that as you push the table through a cut, your hand will be somewhere other than in harm's way.

Each of these safety features is an essential part of our sliding table design, and no part of this kit is intended to be used without them. Highland Hardware will not be liable for any consequences arising from failure to make, install and use each of these features—but more important, we don't want there to be any such consequences. You'll find our safety features are thoughtfully designed, effective, easy to make and easy to use. All they do is protect you without interfering with your work, so there's no reason to do without them.

Fitting the Runners

Unplug your saw and drop the blade below table level. Clean the miter grooves thoroughly, give them a thin coating of the best paste wax in the house, and buff vigorously. Our phenolic runners should be just a hair too wide to fit into the miter grooves on your saw. Use a scraper, or scrape with a sharp chisel held vertically along one edge of each runner until it fits snugly into its groove; make sure each can slide the full length of its groove without binding. The grooves in your saw table may vary slightly in width; mark the runners Left and Right to avoid confusion once you've perfected their fit.

Mounting the Runners

First, countersink and drill pilot holes for four or five #8 screws through each phenolic runner. Next, prepare two shims about 1/4" thick, 24" long, and narrow enough to drop into your saw's miter grooves. Set the runners on the shims so they sit well above the saw table. Push each runner about 1-1/2" forward of the front edge of the table. Squeeze a modest bead of glue along the length of each runner—regular wood glue, medium CA glue, Gorilla Glue or epoxy. Lock your rip fence 36" right of the saw table's left edge. Set the edge of your plywood table against the fence so its left side overhangs the saw table by 1". Align the near edge with the front of the saw table. Press firmly over the runners, pile on some weight and go away while the glue sets.

When the glue has cured adequately, lift the table carefully off the saw. Turn it upside down, center #8 x 3/4" flat-head screws in the pre-drilled holes and drive them in firmly. Now check the runners' action in the saw table, and scrape the edges as needed to provide smooth, non-binding sliding action with no loose play whatsoever.

These tough, slick phenolic runners will slide easily for years to come. You can make the sliding table work optimally by waxing the saw's miter grooves, the runners themselves, and the bottom of the table to minimize friction. Apply a very thin coat of wax and buff well—give it a two or three of coats the first time out, then re-do it every now and then.
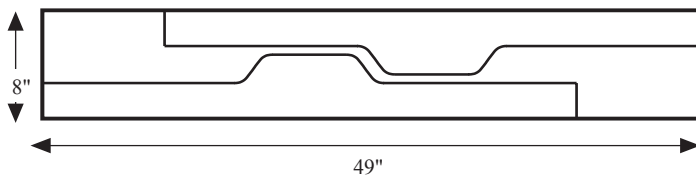
Making Fences

1-1/2" thickness provides the fences enough strength to work with moderate height over most of their length. Glued-up baltic birch or hardwood plywood are ideal materials for the job, but 1-1/2" solid lumber may be used for the purpose. As the cutting diagram above shows, you can make both fences from one piece of wood with relatively little waste. Before you start cutting, check the blade location in your saw table. It's probably centered in the table's width, but do check, and be sure your fence bridges will be centered on the kerf line.
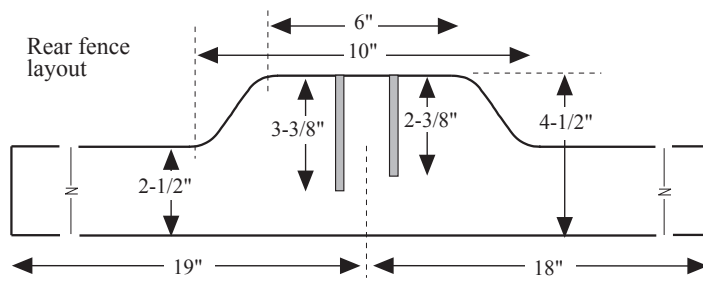
Note: center offset and groove positions must be reversed in front fence.

Each fence gets a couple of grooves milled into its inside face for mounting the clear plastic blade cover. One groove will be an inch longer than the other, and you'll shape the ends of the cover accordingly to give it two automatic height settings 1" and 2" above the table. Slight variability in thermoforming means your cover dimensions may not conform precisely to numbers on paper. Nominally, the grooves are 1/4" wide and 1/4" deep, 1-1/4" apart at the inside—but check your cover and cut the grooves to fit.

An adjustable stop built into the rear fence would be a great convenience for accurate repeatability; FasTTrak hardware (available in our catalog) offers a handy way to mount an excellent flip stop.

Practical Geometry

We'll use a bit of eighth grade geometry to get the fences lined up very precisely square to the saw blade. You'll need a straightedge, a scratch awl or a sharp pencil and a large compass. You can make a beam compass with a pair of trammel points, or with a couple of sharp-pointed screws driven through a stick. Give yourself about 20" between points.

The first step is to cut an open kerf through most of your sliding table. Lower your saw blade all the way. Put the sliding table on the saw with its rear edge at the rear of the saw's throat plate. Plug the saw in. While holding the table still with one hand, turn the saw on and raise the blade slowly until it cuts through the surface. Hold one side of the table, please—<u>not</u> the surface where the blade is about to emerge. Stand to one side of the kerf line, out of the line of fire. Raise the blade to full height, and then push the sliding table forward to cut to within two or three inches of its front edge. Turn off the saw and lower the blade all the way.

Carefully align a straightedge along one side of the kerf and use a scribe or a sharp pencil to extend the kerf line all the way to the table's front and rear edges. Stick the point of your beam compass directly into the line close to the table's rear edge. Swing the other end of the compass out to the left and scribe a crisp, clear arc across the table's midsection. Swing the compass to the right side of the table and mark another arc. Now move the pivot point to the kerf line near the front edge of the table and repeat the scribing process, left and right.

You'll see that the arcs you've marked cross each other. A crisp line drawn between the two intersection points will be very precisely perpendicular to the kerf line, and you can simply measure from it to mark reference lines for mounting both fences as square as you please.

Fence Installation

You're going to screw & glue your fences into place for maximum reliability. From the underside of each end of the table, drill flat-bottomed countersinks and slightly oversize screw holes for each fence. Use pan head screws so front fence position can be fine tuned later. The rear fence should be accurately aligned to the layout line, but you can safely skip the calibration run we'll do for the front fence. Go ahead and glue it up, set it exactly along the layout line and clamp it in place. Drive all the screws in firmly. The front fence (the one closest to you) is the one that counts, because it controls your work for every cut.

Building in Accuracy

Before you glue the front fence in place, you should verify that it is set at precisely 90° to the blade. Clamp it in place along its layout line, drive in the screws and remove the clamps. Prepare a piece of flat, smooth stock at least three feet long and as wide as you can lay hands on (a scrap of plywood, for instance.) Make sure its edges are straight and parallel; check them at least as carefully as you would any workpiece where it really counts.

Now use your sliding table to cut the test board in half. Be very careful to keep your hands well apart and away from the middle of the fence! The blade is going to cut through the front fence as you complete the crosscut, so don't be in its way.

Flip the right half of the board upside down. Butt the freshly cut ends tightly together and align the edges flush. Lay a straightedge along the rear edge. If the reassembled piece is straight along its length, then you cut it very precisely square, and you may proceed to the next paragraph. If the test edge is high in the middle, then your fence is a little too far forward on the right. If it's low in the middle, the left side of the fence is too far forward. Loosen the mounting screws, adjust the fence position very slightly, and check to make sure it's straight. Now repeat the test procedure. Take your time; you only have to get it right once for

the sliding table to do good work for you from now on.

When you've verified that the fence is positioned correctly, clamp two or three stop blocks snug against its inside face. Remove the screws, glue up the bottom edge of the fence, and reinstall it on the table. Butt it against the stop blocks, clamp it firmly, and finally drive home the mounting screws.
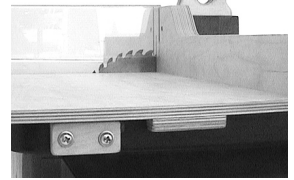
The Stop Block

Screw and glue a 1" x 3" x 1/2" or 3/4" block under the left edge of the table, about 6" from the front edge. Raise your saw blade all the way, put the table on the saw and slide it forward until the highest point of the blade is flush with the face of the front fence. Mark the front of the stop block on the edge of your saw's left side extension wing. You could simply attach a clamp securely on the mark whenever you use the sliding table, but drilling a pair of holes in the wing and bolting on a permanent stop block will be more secure. A self-adhesive rubber bumper installed on the table block makes an effective shock absorber.
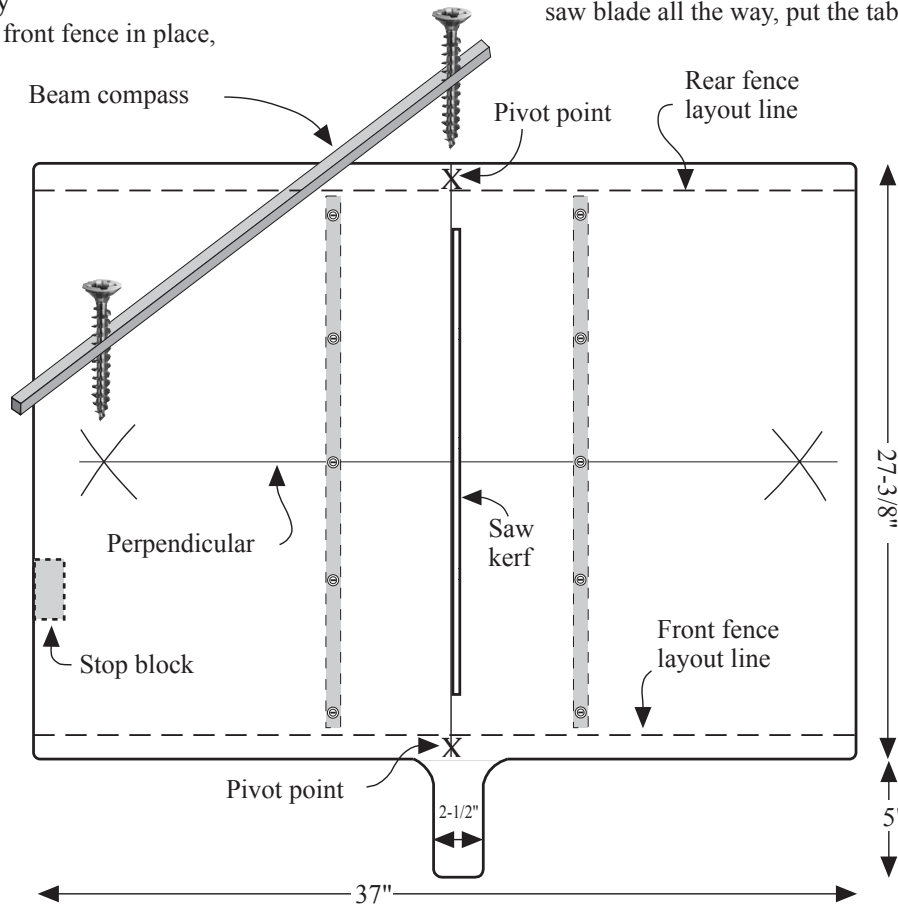
The Exit Block

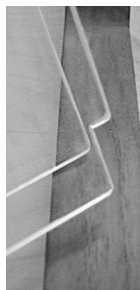The exit block is a chunk of wood 2-1/2" thick, 4-1/2" high and 5" long to match the tail on your sliding table. It can be made from a single piece of hardwood or glued up from solid lumber or plywood. In the underside of the plywood tail, drill & countersink holes for a couple of screws along each side of the kerf line. Make sure the bottom and front face of the block are square. Glue up the block, clamp it snugly against the back of the fence and drive in the screws from beneath. On either side of the kerf, drive two #10 x 3" screws at slightly differing angles through the face of the fence into the block to tie the two together securely. The exit block will protect you nicely—but only if you don't push the table farther forward than you must to complete a cut. Be sure your stop blocks are attached securely on both saw and sliding table.

Figure labels: Beam compass · Pivot point · Rear fence layout line · Saw kerf · Perpendicular · Stop block · Pivot point · Front fence layout line · 27-3/8" · 5" · 2-1/2" · 37"

The Handle

Thanks to its shape and its position astride the table's axis, the exit block makes an almost irresistible handhold—but if your stop blocks were to fail you could push the table farther than necessary and cut through the rear of the block. In that case, holding the block would be as hazardous as having no exit block at all. The best way to keep your hand out of harm's way is to offer it a handle even more attractive than the block. Do not use the table without it! Even the most experienced, safety-conscious woodworkers occasionally will find themselves reaching automatically for a handhold at the table's center of thrust, so you must accommodate this impulse safely.

Our handle design is adapted from a hand saw. Photocopy the pattern, transfer it or cut it out and glue it on a 1" thick blank of plywood or solid wood. Round over all the edges inside and out (except along the bottom, of course) to make the handle as comfortable as you like. Drill two 3/8" holes 2" deep into each upright, and drill matching holes 2" deep in the top of the exit block (dowel centers make it easy). Insert a couple of dowels just under 4" long, and glue the handle securely atop the block.

The Blade Cover

Our Lexan blade path cover completes the sliding table's safety package. At each end of one of the side panels, saw out a corner notch 1" high by 5/16" wide. A thin, fine-toothed hand saw works nicely. The cover is designed to stand just above the surface of most common workpieces. For stock 1" thick or less, slide the un-notched side panel into the 3-3/8" long grooves in your fences. For 1-3/4" stock, turn the guard end for end and slide the un-notched side into the 2-3/8" groove. When you're cutting other thicknesses, the cover may be allowed to rest on the work itself, as long as there's at least an inch or two of workpiece on either side of the blade. You must avoid trapping a narrow cutoff between the blade and the inside wall of the cover, which could cause a small or not-so-small kickback explosion. Try the cover between the fences, paring the grooves if needed to provide a secure, easy fit. A sharp plane can trim the Lexan easily if the cover is a little too long to slide readily into the grooves.

Outfeed Support

Your sliding table requires outfeed support beyond the rear of the saw, just like any workpiece longer than a foot and a half or so. If your saw is equipped with a built-in outfeed table, it should have 1" wide grooves milled in the surface to accommodate the sliding table's phenolic runners. If you have free-standing outfeed support, make it roughly 3/8" lower than the saw surface and wide enough to support both runners. Be sure it keeps the sliding table in balance all the way through every cutting operation, regardless of workpiece width.

← Grain orientation →

Full size
handle plan

3/8" dowels
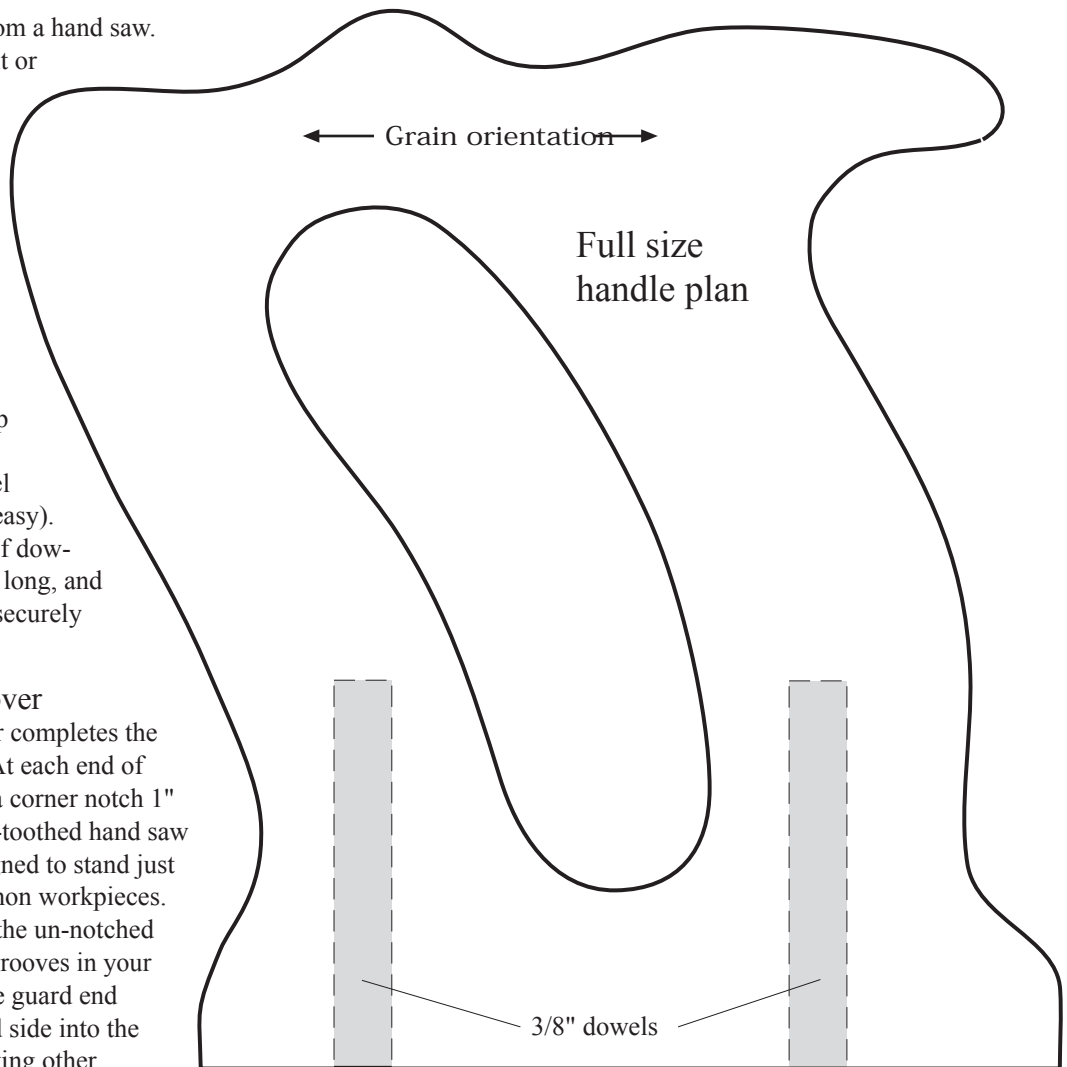
Enjoy

Congratulations! This completes the construction of a safe, accurate and very useful fixture that should serve you well for many years to come. It provides a practical way to cut wide stock, long stock and very short stock as well. And you can always turn to your sliding table whenever you need to make cuts that are absolutely, positively, just plain square.