

Cutting It Close Safely

When cutting small workpieces on the tablesaw, you don't have to sacrifice safety for accuracy

BY STEVE LATTA



The basics of safe ripping. Use a long push stick, outfit the saw with a zero-clearance insert and a splitter, and rip molding that has been shaped on wide stock.

One of the written tests that I give my students includes this question: “Never stick your fingers in the (fill in the blank).” The question is just a freebie for bonus points, but it serves to remind my students to keep safety foremost in their routine work habits.

A lot of the safety techniques I use stem from a background in Federal furniture and the necessity for milling a lot of inlay and banding. Working safely can be a challenge when it comes to milling small pieces of molding, decorative banding, or beading for glass doors. Some common shop practices increase operator safety at the expense of accuracy, but there are ways to execute cuts on the tablesaw that will ensure both.

There are a few basics to keep in mind when milling small pieces of wood, but first and foremost is a healthy dose of common sense combined with a deep respect for the equipment being used. Machinery is both powerful and impartial, and I never let that slip my mind. If the techniques presented here rattle your nerves, don't use them. The only reassurance I can offer you is that they've worked for me for a couple of decades.

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SAFETY TIP

A long push stick provides more control

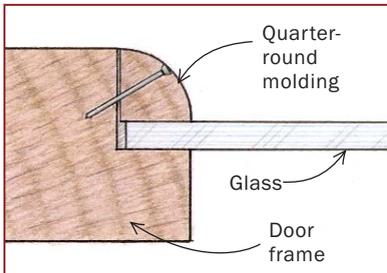
Push sticks are critical for holding down workpieces and keeping your fingers away from the spinning blade. Many people use the long-handle type with a simple notch cut into the end. In my opinion, these things are dangerous. They do little to hold down the stock on the saw table because they contact the stock only on one small area, and they're also prone to slipping into the blade during a cut. I prefer the longer and lower variety of push stick (often called a paddle or a shoe) because it holds the stock flat on the table and rides securely against the fence.



Watch it on the Web

For more safety tips, go to www.finewoodworking.com.

Large paddles make the best push sticks. Latta prefers to use MDF to make a variety of paddle push sticks in different lengths. When each wears out, he simply makes a new one.



CUT SMALL MOLDINGS FROM LARGER STOCK

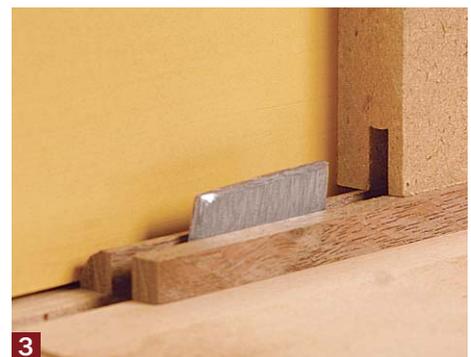
When making small moldings, such as quarter-rounds, I profile both edges of a piece of wide stock and then rip off the molding in strips. Many woodworkers rip in such a manner that the molding falls away outside the blade and the fence. With that method, the fence must be reset for each cut, which often leads to dimensional differences that can snowball into a variety of small nightmares. To avoid those problems, I rip small moldings between the blade and the fence.



1 Rip the molding strips to thickness. After shaping a quarter-round on all four corners of a piece of stock, rip two strips to the desired thickness.

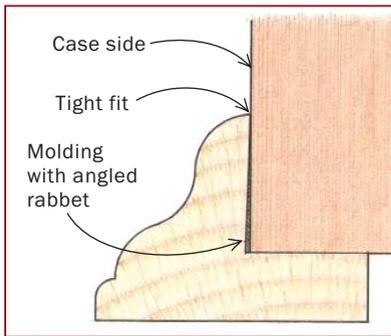


2 Rip the first edge to width. With the fence held at the same setting, rip the first corner of each molding strip to width.



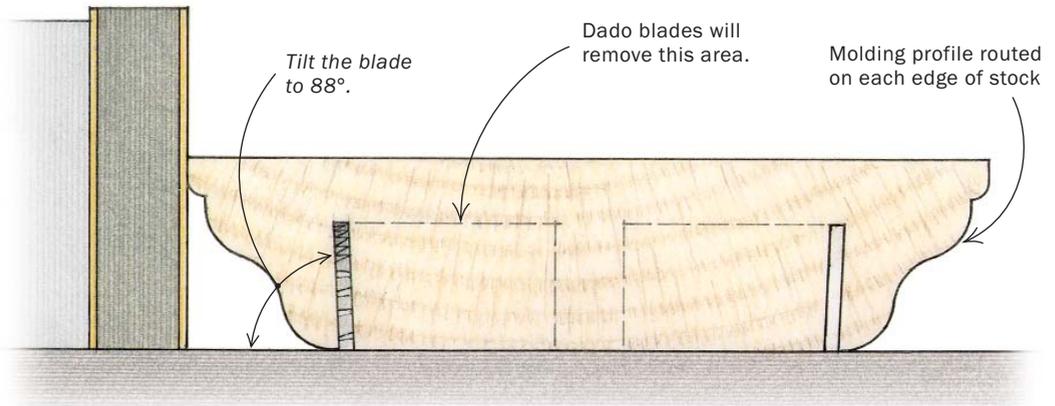
3 Rip the second edge to width. Rip the second and last piece of quarter-round molding from each strip. The square piece remaining on the outside of the blade is scrap.

SHAPE COMPLEX MOLDINGS BEFORE RIPPING



Here is a trick to getting snug-fitting moldings. After shaping the molding profile on the edges of a board, tilt the sawblade a couple of degrees to cut the back edge at a slight angle. That way, the moldings will sit tight in a corner or at the bottom of a cabinet carcass.

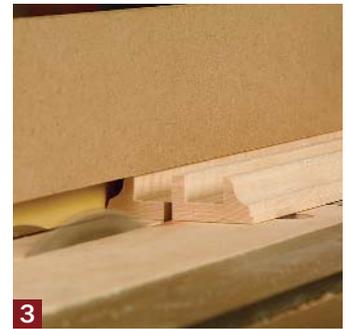
You can plow out the rest of the waste with dado blades. For two pieces of finished molding, use a board that's wide enough to leave a small bit of extra wood in the middle, between the dado cuts, because it will be more stable on the saw table.



1 Use a rip or a combination blade for the first cut. Tilt the blade to create a slight back bevel.



2 Use dado blades to form the rabbet. Set the blades 90° to the saw table to shape the rabbet that fits around the bottom of the case.



3 Cut the moldings to size. Rip two finished lengths of molding from each shaped edge of the stock.

USE THIN PUSH STICKS FOR THIN STOCK

One way to rip shaped moldings such as coves is to make an interlocking push stick that fits into a short bandsaw kerf cut into the end of the molding. Though I normally prefer the larger, paddle-style push sticks, I do sometimes use one made from a thin scrap of wood that fits into the bandsaw kerf and allows me to push the molding easily past the blade. I use thin push sticks only in conjunction with a hold-down clamped to the fence, behind the blade. The hold-down prevents the workpiece from lifting.

In some cases you may have to rip the molding with the fence set up to the left of the sawblade, as with the walnut cove moldings shown.



A push stick that locks in place. Although he usually prefers larger, paddle-style push sticks, Latta occasionally uses a thin one shaped on the bottom to lock in place with a matching kerf.



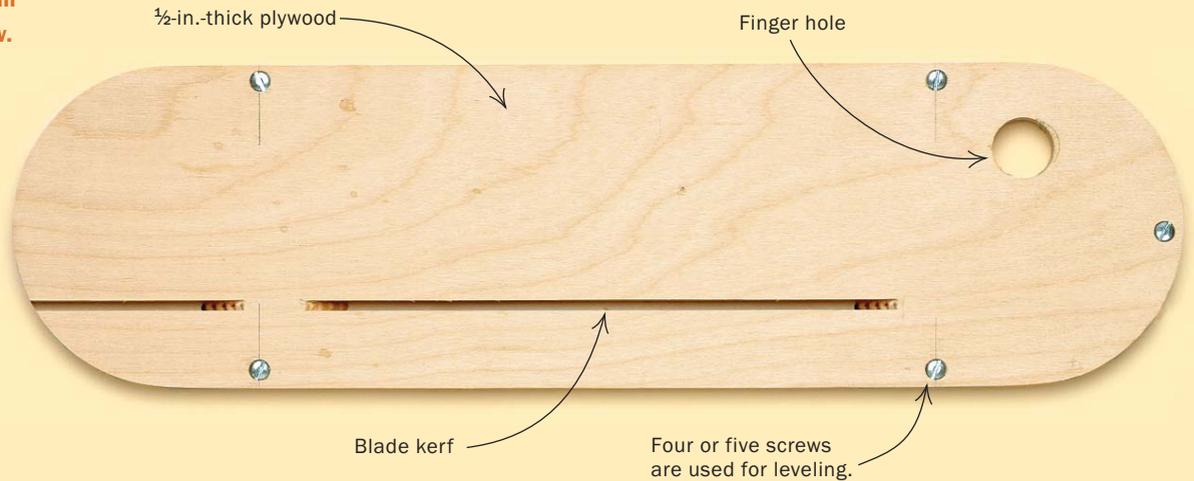
SAFETY TIP

Use a zero-clearance insert and splitter

A zero-clearance insert, or throat plate, is a must for cutting small pieces of wood on the tablesaw. On many saws, the factory insert that comes with the machine will accommodate a full 1/4-in. dado set. With a space that wide, small workpieces can get jammed in the insert or lost to the dust-collection system, and safety is compromised. The solution is to use the factory-supplied insert as a template to make a replacement, such as the one at right.

I make inserts out of 1/2-in.-thick plywood with small screws in the bottom to act as levelers. On most 10-in. saws, the blade won't drop down far enough to place the uncut insert in the opening. To solve that problem, switch to an 8-in. single dado blade. Then position the fence over the insert stock. Place another piece of stock to the left of where the blade will emerge. Last, raise the spinning blade all the way through the insert.

UNDERSIDE OF SHOPMADE INSERT



Use a dado blade for the first cut. For 10-in. tablesaws, an 8-in. dado blade sits far enough below the new uncut insert that it won't contact the insert when the saw is turned on.



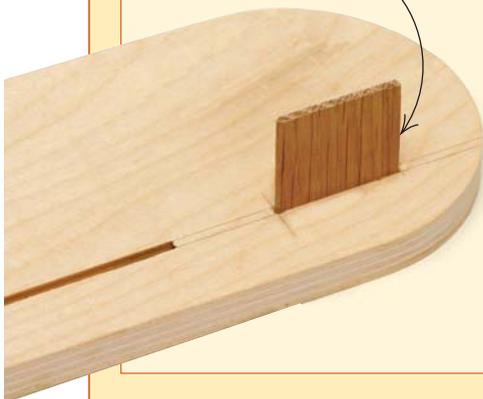
Clamp the insert in place with the saw fence. Position the fence over one edge of the insert and clamp it in place. Hold a piece of scrap over the other edge as you raise the blade into the new insert.

TWO SHOPMADE SPLITTERS

A proper splitter is critical for milling short or narrow stock. I use two types on my saws. The first is the large factory splitter that comes standard on many cabinet saws. I also use smaller shopmade stub splitters that project anywhere from 3/16 in. to 5/8 in. above the table surface; I make them from wood or steel bar stock available at most hardware stores. These splitters prevent narrow workpieces from pinching on the blade but don't get in the way of push sticks.

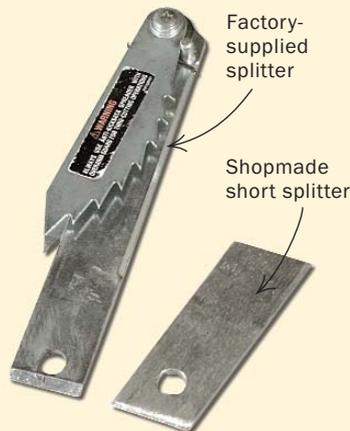
HARDWOOD SPLITTER

Grain runs vertically for strength.



Drill the mortise. Using a fence on a drill press, drill 3/2-in. holes in line with the blade kerf. Clean up the mortise with a chisel, and glue in the splitter.

STEEL SPLITTER



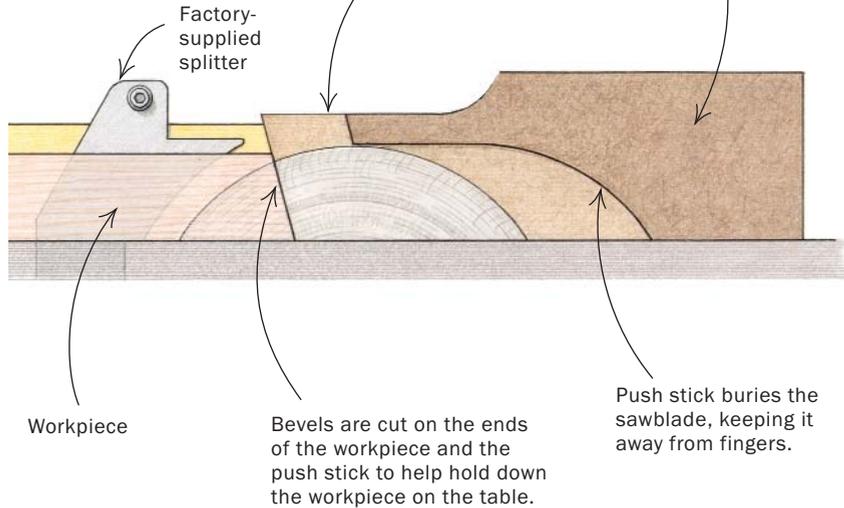
Make your own splitters for special tasks. Cut steel bar stock, drill a hole for the fastening bolt, and file the leading edge of the splitter to a bevel.

RIPPING THIN STRIPS



Kerf cut in front of the push stick allows it to slide into the splitter, moving the workpiece past the blade.

Tall push stick



A push stick for ripping thin stock. A beveled front end on this push stick keeps the back end of the workpiece from rising up during the cut.

Commercially bought stringing is worthless, in my experience, because it dries out and becomes incredibly brittle. I make all of my own stringing out of $\frac{1}{8}$ -in.-thick holly stock that I cut on the tablesaw. I typically use 2-in.-wide stock about 30 in. long and saw it on edge. I cut

a 15° angle on the back end of the board and a mating surface on the front end of my push stick to keep the stock from lifting away from the table. To cut stringing, I use the factory splitter, and the push stick rides through the cut until stopped by the splitter. This allows the holly to clear the

blade completely. After finishing the cut, the push stick must be slid back over the fence. It is critical that the push stick be long enough that the rear portion of it remains uncut and therefore sturdy and stable in use.

USE A SLED FOR SMALL PIECES

There are a lot of hold-downs, both shopmade and store-bought, that come in handy for securing small pieces during ripping or crosscutting. One jig I use a lot is a store-bought hold-down clamp screwed to a small carriage mounted with a runner that rides in the miter-gauge slot (see the photo at right). Sandpaper mounted to the carriage and a stop block help hold the workpiece in place.

When I use this hold-down jig, I often set the sawblade deliberately high for two reasons. First of all, the downward pressure created by the extrahigh blade actually helps hold the workpiece in place. Also, it reduces the possibility of tearout as the blade exits the cut. A blade set too low tends to lift the workpiece upward during the cut—an unsafe condition. This jig also has a handle on it that is placed well away from the blade.



CROSSCUTTING DELICATE BANDING



Handle with care. This fragile decorative banding is about $\frac{1}{16}$ in. thick by $\frac{1}{8}$ in. wide. As it is crosscut on an angle, the thin pieces must be allowed to fall away from the spinning blade to keep from being destroyed.

Making decorative bandings involves a whole series of very fine cuts—both rips and crosscuts. For ripping veneer strips down to $\frac{1}{16}$ in. thick, I follow the method described at left, on the opposite page. For crosscutting thin slices of banding on an angle, I use a crosscut sled on the tablesaw with a sliding stop block. With the sliding block in position for the start of the crosscut, the workpiece is properly indexed for exactly the right thickness so that I can make repeated crosscuts at reliably the same thickness.

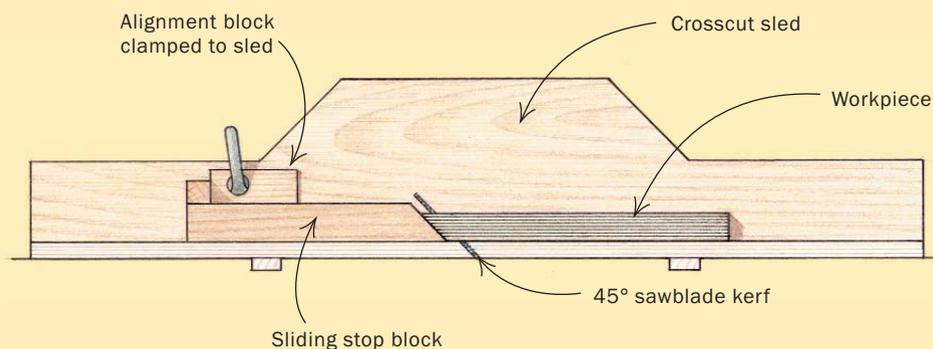
The key to making this setup work accurately is to position the alignment block before crosscutting any of the laminated pieces of banding. The alignment block serves as a stop for the sliding stop block, which is beveled on one end at a 45° angle. The thickness of the banding will be the distance between the beveled end of the sliding stop block and the sawblade. Use the sliding stop block to index the workpiece, and then, holding the workpiece firmly against the fence on the crosscut sled, slide the stop block out of the way before making the cut.



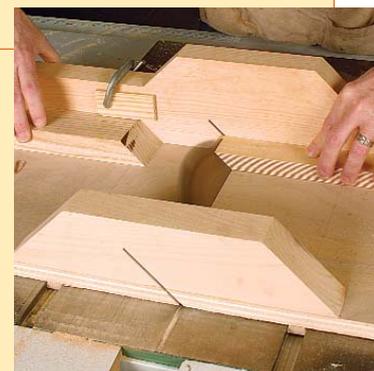
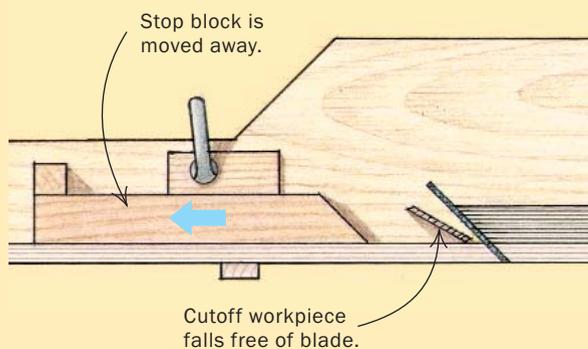
SAFETY TIP

A CROSSCUT SLED KEEPS FINGERS AWAY FROM THE BLADE

1. POSITION THE WORKPIECE



2. SLIDE THE STOP BLOCK OUT OF THE WAY



Free-falling. Slide the stop block out of the way before making the cut to allow the cutoff to fall free of the blade.