

Get More from Your Miter Saw

Use it to break down rough stock, but get furniture-quality cuts, too

BY MARC ADAMS



Because miter saws were not around when many of us took a high school shop class (remember the radial-arm saw?), the majority of us were never taught how to use them. The hosts of those television DIY shows are no help.

Although relatively lightweight and portable, the “chopsaw” deserves as much respect as any machine in the shop. It certainly carries as much potential danger. On the other hand, it is capable of more than you might know.

With a few tips and upgrades, you’ll be able to do almost all of your crosscutting and mitering on the miter saw, like I do, getting

furniture-quality cuts in half the time it takes to drag out your crosscut sled. Of course, the miter saw is also the quickest way to rough-cut lumber to size, and I have tips for that, too.

My tips and techniques are based on the type of saw that I favor, the simple chopsaw (see “Basic chopsaw is better for woodworking”), but many will work for sliding miter saws, too.

A few key upgrades

The first step is to replace the blade that came with your saw. It will struggle through big hardwood lumber, and it won’t have



enough teeth for the finest cuts. You don't have to buy the most expensive one, but do get a good blade designed for a miter saw.

With any crosscutting tool, you have to deal with tearout. One of the best ways to enhance your miter saw is to add a zero-clearance throat plate and a sacrificial fence. These simple upgrades do three great things: They eliminate chipout at the bottom and back edges of the cut; they show you exactly where the blade will cut, at any angle, making it easy to line up a mark accurately; and they make the saw safer, preventing small offcuts from getting trapped against the blade and kicking back at you.



Basic chopsaw is better for woodworking

Designed for carpenters and contractors of all stripes, miter saws come in a bewildering variety of configurations. One advantage of running a woodworking school is that I get to purchase lots of tools and learn which features are truly worthwhile. For woodworkers, I've found that the simple chopsaw is the best bet and the most accurate. You don't need to pay extra for a big sliding model if you have a tablesaw and crosscut sled for wider stock.

But the cost savings don't end there. You also can skip the double-bevel feature, since you'll get better cuts when pivoting the head rather than tilting it. And I'm not a fan of laser guides. They don't work in every blade position, and they need regular adjustment.

On the other hand, I would go for the full 12-in. blade over the 10-in. size, and I'd make sure the saw has an automatic brake (most do) that stops the blade when the trigger is released. You'll see why shortly. Another feature I find handy is a miter range of 50° or more.

Replace the stock blade. Get a high-quality blade designed for miter saws, with 100 or so teeth for finer crosscuts.



Set up for success

ZERO CLEARANCE IS ESSENTIAL

This is a crosscutting tool, so without sacrificial surfaces below and behind the cut, you'll get tearout.



Replace the plate. Remove the stock throat plate and trace around it (left) onto $\frac{1}{4}$ -in.-thick MDF. Saw and sand it to fit, and then screw it into place (above), or attach it with carpet tape. You might have to plane the MDF to make it flush with the base.



Add a fence. A 6-ft.-long piece of $\frac{1}{2}$ -in. MDF or plywood makes a good sacrificial fence. Attach it with carpet tape.

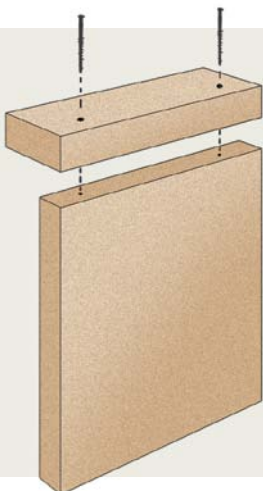


Cut the slot. Make a cut through the plate and fence, and say good-bye to tearout. The zero-clearance slots also show exactly where the blade will cut, making it easy to line up a mark precisely.

LONG FENCE HOLDS STOPS

SIMPLE BUT EFFECTIVE STOP

This basic stop block hangs on the fence. The cleat keeps it square to the blade, with a slight gap between it and the table so dust doesn't interfere.



Using a stop safely. Always hold the workpiece on the stop side. That part is trapped against the blade, and should be controlled at all times.

To tame tearout along the bottom edge, some woodworkers cover the base of the saw with a full layer of plywood, but I prefer to replace the throat plate. That way, you don't lose thickness capacity. Also, the saw always comes down in the same slot, even when pivoted for miter cuts, so you don't have to replace that shopmade plate unless you change blades or make a bevel cut with the head tilted.

I've made these inserts successfully for at least five different brands of saw. Just trace the standard plastic insert on a piece of $\frac{1}{4}$ -in.-thick MDF. Then bandsaw and sand the edges to fit. If neces-

sary, you can plane the insert to bring it flush with the surface. To install it, you can use thick (exterior grade) carpet tape, or redrill the screw holes and use those.

To prevent tearout along the back edge of the board, you can't easily make a sacrificial insert in the metal fence. So I use a full layer of plywood there, which does steal some width capacity. I recommend $\frac{1}{2}$ -in.-thick MDF or plywood cut roughly 6 ft. long and just wide (tall) enough to fit under the motor or handle in its lowest position. The extra length comes in handy for attaching stops. Again I use carpet tape to hold the fence in place, making

ADVANTAGES OF TABLE-MOUNTING

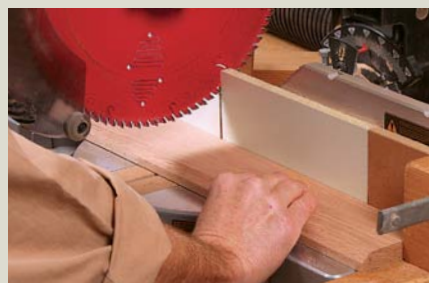
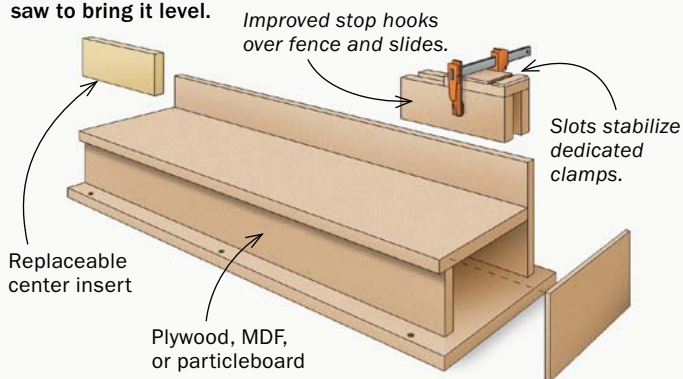
If you can dedicate some counter space to your saw, there are a number of advantages.



Better work support. Bolt down the saw and build long boxes to extend the fences and support long boards and stops.

SIMPLE SUPPORTS, SNAZZIER STOPS

Adams bolts his saw in place, and also screws down these work supports, so their fences line up with the center insert. Shim the saw to bring it level.



Replaceable insert. You don't have to replace the whole fence every time you make a miter cut and ruin the zero-clearance slot. You just replace the center insert, which is held in place with carpet tape.

Get furniture-quality cuts

You can get smooth, accurate cuts of all kinds with this lightweight machine. Proper technique is the key.



1

THREE STEPS TO CLEAN CUTS

Power up. Let the blade get to full speed before lowering it.



2

Let it cut. It takes time to get 100 teeth through a big piece of wood, so let the blade cut at its own pace.



3

Now wait. This is the most important part. Let the blade come to a full stop before lifting it or moving the stock. This is where an automatic brake speeds things up.

it easy to change. You'll need to replace it when you change cutting angles.

Using stops for repeat cuts is one of the best moves you can make on a miter saw. You can place them on either side of the saw, but for shorter cuts, the stop might need to go on the opposite side from the motor to avoid bumping it.

The right technique makes all the difference

All miter saws have a degree of slop in the arbor, which allows blade runout. That's why proper technique is so critical to getting accurate cuts.

I don't actually like the term "chopsaw" because it reminds me of words like "hack" and "slash." Forcing the blade will make it deflect and wobble. Also, a blade with more teeth needs more time to get through the wood. On the other hand, if you go too slowly, you'll get a burnt or burnished cut. So let the blade cut at its own pace—not yours. Go by feel. The same blade will cut differently in soft and hard wood, through larger and smaller workpieces.

PATIENCE REWARDED



See for yourself. The left board was cut with good technique. On the right sample, Adams lifted the blade back up through the cut while the blade was still spinning.

PERFECT MITERS

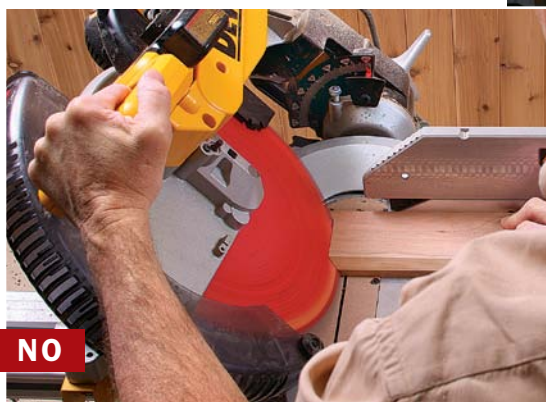


NO

Stay away from the blade. Pivoting the saw toward your body (above) is less safe and makes it hard to reach in and hold the stock steady. Change hands and stand on the other side (right) to give yourself more room.



YES



NO

Turn tricky bevels into happy miters. A miter-saw motor is less stable when tilted on its side (above), affecting the quality of the cut on this base molding. Also, too much of the blade is exposed. By standing the molding up (right), you turn a bevel cut into a safer, more accurate miter.



YES

If yours is a sliding model, pull it all the way toward you before lowering it and pushing it through the cut. Again, go by feel.

The second important rule is to let the blade come to a stop before raising it back up through the cut. The cutting action tends to stabilize the blade, but it can wobble again when the cut is done. Also, you tend to raise the blade faster than you cut with it. That's why you will hear that "twangggg" sound when you bring a spinning blade back up through the cut, and will see deep sawmarks.

If the brake is working well, you'll only have to wait a couple of seconds for the blade to stop, but the quality of the cut will be considerably better. So force yourself to develop this habit.

Miters vs. bevels—Because of the way the guard works, I do not like using a miter saw's bevel function, in other words, tilting the head. There is just too much blade exposure, and it ruins the



Convert compound angles, too. Laid flat on the saw, this crown molding would require a combination miter and bevel cut. Add a sacrificial base to the saw with a cleat that stands the molding up in its installed position. Then you can make a simple 45° miter cut for perfect joints.

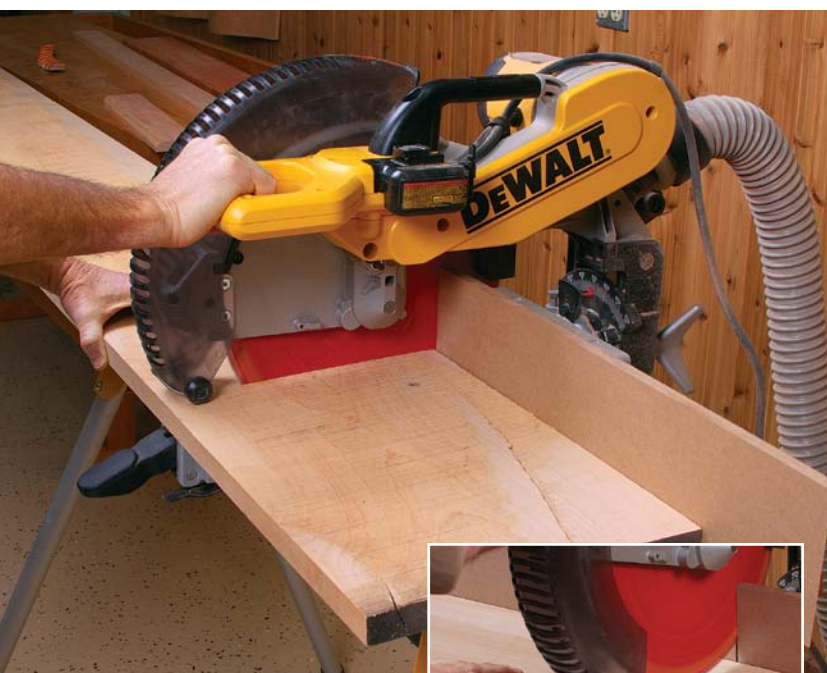
Going bigger and smaller

GET MORE WIDTH IN A PINCH

When chopping up boards into rough lengths, the saw's width capacity often falls short. These tricks add capacity.



Lift it. If you have only a sliver of wood left (above), you can safely lift the near edge into the spinning blade (right) to finish the cut.



Flip it. To almost double your cutting capacity, make a full cut on one side (above), and then flip the board to finish the job (right).



zero-clearance insert. It also puts the weight of the motor on the side of its pivot point, causing it to flex sideways as you pull it downward, compromising the cut.

The good news is that you can stand a narrow board up against the fence, turning a wobbly bevel cut into an accurate miter cut. There is also a great trick for avoiding compound-angled (bevel and miter) cuts on crown molding (see p. 53), turning those into simple miters, too.

Coax extra width out of your saw—There are a number of ways to get more width capacity from your saw. This is most often a problem when cutting rough lumber to approximate length, and usually on a chopsaw. Sliding miter saws are not my favorite, but they do have significantly more cutting capacity.

First let's cover an important safety tip. When cutting bowed, twisted, or cupped boards, always make sure the stock is touching the fence and base in the cutting area. Otherwise it will dive down or backward as you finish the cut, pinching and binding dangerously against the blade.

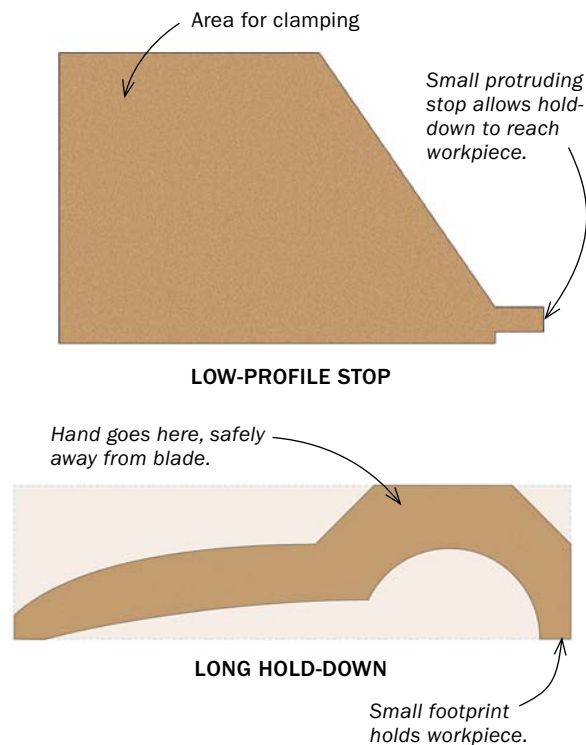
The first tip is that if your cut leaves $\frac{1}{2}$ in. or less to be nicked off at the end, you often can simply lift the front edge of the board a bit to finish the cut. The other trick for rough lumber is to make as wide a cut as possible and then let the blade stop, flip the board over, realign the blade with the kerf or mark, and finish the job.

For accurate, furniture-quality cuts, I have another handy tip. Just put some scrapwood underneath to raise up your stock to the bigger part of the blade. You can add an inch or more to the width of the cut this way on a 12-in.-dia. blade.



A trick for fine cuts, too. To add an inch or more to a cut without compromising the quality, raise the board on a sacrificial piece in order to use a wider portion of the blade.

HANDLE SMALL WORK SAFELY



Cut precise pieces. A low-profile stop and special hold-down let Adams safely control small, precise parts for segmented turnings, for example.

A few more safety tips

In 2010, the University of Cincinnati did a study at our school on woodshop noise levels. The miter saw produced more decibels than any other tool in the shop. So always wear ear muffs or plugs, and of course, protect your eyes at all times.

Never cross your arms. Most people do this when cutting miters, choosing to use their normal trigger hand no matter which way the miter is pointing. Miter-saw triggers will work with either hand, and for miter cuts you want to stand opposite where the saw is pointing. That might mean putting the board on the opposite side you are used to, and switching hands. This will give you better visibility and help you hold the stock more tightly so it isn't pulled sideways by the blade. Another time you might want to switch hands is to hold onto the piece that is trapped against a stop.

I have a 3-in. rule on all power tools, making sure my hands always stay out of this danger zone. So for smaller pieces, I use a special stop and hold-down to keep the stock safely in place against the fence and table. These are easy to make (see drawings, above).

So make a few upgrades to your saw, let it come to a stop after each cut, and follow a few simple rules. Then you'll really see what a miter saw can do. □

Marc Adams runs Marc Adams School of Woodworking in Franklin, Ind. For a full class list, go to MarcAdams.com.



Trim veneers cleanly. Veneers (and plastics) will shatter on the miter saw, but if you hold them down with a sacrificial board (above), you can get a perfect cut on a whole stack (left).