**TOOL TEST** 

# 12-in. Chopsaws

Basic miter saw is the best choice for furniture makers

BY MARC ADAMS

ne advantage of running a woodworking school is that I get to buy lots of tools and learn which features are truly worthwhile. When it comes to miter saws, I've found a basic, nofrills chopsaw to be the most accurate and useful model in a woodshop. You don't need to pay extra for features that don't really pay off, such as a big sliding saw, because you probably have a tablesaw and a crosscut sled for wider stock.

I recommend saving a few more bucks by choosing chopsaws that tilt in one direction only, since I prefer pivoting the head sideways for angled cuts of all kinds, rather than tilting it. I'm not able to get furniture-quality cuts with the head leaning over sideways, probably because so much of the blade is engaged in the cut and it is hard to stop the workpiece from creeping sideways. Also, on most saws, a cut that is square to the board with the blade standing up straight suddenly isn't when you tilt the head over sideways (see photos on the next page). The current crop of saws was no



**The heavy lifters.** Adams's two most experienced staffers, Zane Powell (in front) and Doug Dale, did the bulk of the testing, working these saws over for four days.







The acid test. The best test was attempting to make a 3-in.-wide mitered frame with gap-free joints. The Bosch and Makita saws did the best job.

#### BRAKES

Quick stop. You'll get a better cut if you wait for the blade to stop before bringing it back up through the cut. All the saws except the Skil have blade brakes, and all are relatively fast.



## FEATURES THAT FALL SHORT



Hold-downs not very helpful. Four of the machines came with hold-downs, but all shifted the stock slightly when tightened, in this case moving it away from the fence.



Bevel problem. All miter saws are less effective on bevel cuts than they are on miters. If you adjust any of these five saws to cut square with the head vertical, you'll find that the cut is no longer square when you tilt the head.

different in this respect: None was able to make a smooth, accurate bevel cut, at least not by furniture-making standards. Miter cuts, as always, were much better, if not perfect. I'm also not a fan of laser guides; in my experience, they don't work in every position.

On the other hand, it is well worth paying for the full 12-in. blade size vs. the 10-in. models. A 12-in. chopsaw has 30% more cutting capacity than its 10-in. counterpart in both width and thickness. These larger models also have more table area, for better workpiece support, as well as a taller and longer fence system.

In the end, just five saws filled the bill, all of them 12-in., non-sliding units that tilt in one direction only.

My two most expert staffers, Zane Powell and Doug Dale, did the bulk of the testing. They've seen hundreds of tools and machines come and go, and they are the ones students come to when a tool breaks down or won't work right. I developed the test criteria, supervised throughout, and did the writeup.

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#### **Tough cutting tests**

We tested these saws with today's woodworker in mind, not today's contractor. So we made our test cuts in hardwoods, milled square and true, and modern composite materials like plywood and MDF, not pine or other constructiongrade materials.

The blades that come with most of these saws are thin, without enough teeth for smooth crosscutting. To level the playing field during the test, we did what I always do: replaced the stock blade on each saw with a higherquality one, in this case a Freud 12-in. Ultimate Cutoff Blade with 96 teeth and a 10° hook. Before testing be-

gan, we took each of the new blades and made about 50 cuts in MDF and hardwood to take the fresh edge off the carbide.

We compared runout by making 90° cuts in all sizes and types of materials, checking for accuracy with a Starrett combination square, and adjusting the saw as needed. We also checked the flatness of each of the tables and fences. The Bosch stood out in both of these categories, while all the others had inconsistencies in one or the other. After

# BOSCH CM12

Street price: \$330 Accuracy of cut: Excellent Quality of cut: Excellent



REST OVERALL

The first thing we noticed about the Bosch were deep milling marks on the table. These turn out to be a big benefit, gripping the wood to keep it firmly in place when cutting miters and bevels. With other saws, you have to maintain a tighter grip to keep workpieces from creeping. The stops and detents for common angle settings needed zero adjustment right out of the box. Also, the Bosch is the only model with a completely flat fence and table. Better yet, it produced the smoothest cuts, and flawless miter joints. Bosch got most of the little things right, too. The dust collection is the best of all the saws and the blade-braking system is

smooth and fast. The blade is easy to change, and the guard stays out of the way on its own, the only one to do so. The only flawed feature was the graduated miter scale. The lines are thick and the pointer is imprecise. Also, when you set the pointer accurately at 90°, it is off a bit at 45°. The detents are accurate, though.



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a lasha ha ha ha ha

**Easy adjustments.** Although the Bosch's stops arrived perfectly set already, they are also the easiest to adjust, with a wrench that stows securely on board.



**Best dust collection.** The Bosch's tall, close-fitting dust port was the most effective on all types of cuts, keeping the shop floor pretty clean.

Scale is off-scale. The only glitch on this tool is a miter scale that reads perfectly at 0° but is off slightly at both 45° settings. The detents are dead-on, however.





**Furniture quality.** The Bosch was the smoothest cutter, producing glassy cuts on the toughest woods, like this big ash plank.

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# DEWALT DW715

Street price: \$270 Accuracy of cut: Good Quality of cut: Good



Ambidextrous. Without an unnecessary safety release, the DeWalt's trigger is easy to operate with either hand.



Great view. Some cuts are easiest to line up by looking straight through the guard at the blade, and the DeWalt's large viewing ports make it easy to line up a pencil mark.

f you don't need your miter saw to make furniturequality cuts, there is a lot to like about the DeWalt. The trigger works easily with either hand and doesn't have a second safety trigger, which is a slightly annoying issue with other saws. Changing the blade was easy and the blade guard has large view ports. Also, the table-locking handle is the easiest and most intuitive to use, with 11 detents for common miter settings, more than the other saws. But the cutting action was not as smooth as on the Bosch and Makita saws, and there was a little more runout, especially when cutting miters.

# ΜΑΚΙΤΑ Street price: \$315

Accuracy of cut: Very good Quality of cut: Excellent

his is the most solidly built saw, with more metal parts and thicker castings than the others. It has very little runout, smooth cutting action, and a smooth and fast braking system. On the other hand, you must adjust the fence to adjust the miter detent angles, which is inconvenient, and the detents tend to drag the table toward them, making it hard to set up certain miter angles. But our main issue with this saw was that its table was the least flat, which affects cutting accuracy at times.

Zeroclearance matters. A shopmade throat plate prevents tearout on the bottom of the cut. All of the units accommodate these, but they are easiest to install on the Makita.



Low point. Sections of the table and fence are not level with each other, affecting the accuracy of some cuts.

adjusting the saws in every way possible, our ultimate test for both cut quality and accuracy was making a mitered frame in wide material, and checking for gaps on every side of all four joints. Only the Bosch saw was able to make a flawless frame, though the Makita came very close.

Last, we checked the cutting capacity of each saw, using a 1-in.-thick board. Crosscut capacity was very similar, with each saw able to cut a board very close to 8 in. wide, or slightly wider. But capacity under the blade varied, which would come in to play when standing boards up on edge against the fence to turn bevel cuts into miters. The Bosch, Ridgid, and DeWalt saws stood out here, allowing nearly 7 in. under the blade, while the Makita (51/2 in.) and Skil (5<sup>1</sup>/<sub>8</sub> in.) saws fell a bit short.

### Ease of use matters, too

With five saws set up in a row, it quickly became clear which of the models were easiest to use. We noticed things like angle markings that are easy to read, and triggers that operate comfortably in every position of the saw, including when you have to switch hands for certain cuts.

We didn't expect every stop and detent to be dead-on out of the box, but we checked to see how easy it was to adjust them. We discovered that the miter detents are not adjustable on the Makita, Ridgid, and Skil chopsaws-the fence adjusts instead, which we found to be less convenient.

Quality of cut also depends on having a zero-clearance insert in the table of the saw. Because you will need to replace it from time to time, we made sure that each saw lets you install a shopmade MDF insert. It's not too hard on any of them, but the job is easiest to do on the Makita.

We didn't factor in weight and portability, since I recommend bolting down your saw in a shop setting. Because we also build table and fence extensions around our saws, we didn't put much stock in the work supports that all but the DeWalt and Ridgid saws include on both sides of the table, though you might want to factor those in.

We tried the work holddowns that come with most of the saws, but all moved the stock away from the fence or off the table when tightened. And we also tried the laser guides included here and there, but none proved to be visible and/or accurate in all blade positions. That's fine, because we prefer working to a pencil mark, and using stops for repeat cuts.

#### **Head-to-head results**

All of these saws had enough power to get through the widest, thickest plank of hard maple that fits on the saw, but not all were able to produce furniture-quality cuts. That said, most would do well on the contractor tasks they were designed for, such as mitering trim and cutting studs and flooring to length.

At the end of the day, the Bosch CM12 stood clearly above the rest, mak-

ing clean, precise cuts in the toughest woods. In fact, if the design doesn't change, this is the chopsaw I'll buy when it comes time to replace my current crop.

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Street price: \$300 Accuracy of cut: Good Quality of cut: Fair





Fence problem. On a few of the saws, you must square the fence to the miter detents. On the Ridgid, that adjustment was not possible without filing the attachment holes.



**Good dust port.** The Ridgid's dust port aligns well with the blade and takes a full-size vacuum hose, making it one of the most effective.



\$220 Accuracy of cut: Poor Quality of cut: Poor



Slight shift is a big problem. Turning the locking knob shifts the table angle slightly, even when it is locked into a detent.

**Rough cuts** mean gappy ioints. Runout in the motor and bearings allows the blade to wobble, which gave the Skil the roughest cuts among the machines tested. These scalloped cuts were the reason the Skil's miter joints wouldn't close.

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his saw has too many problems for us to

recommend it. The guard had to be removed

had been painted over, making it very difficult to

and quality of cut. It is difficult to achieve an

remove. But the main problems are with precision

accurate miter, because the locking knob moves the

considerable runout in the blade, which contributed to

the inaccuracy of joinery cuts, and there is no brake.

table sideways when you tighten it. Also, there is

completely to change the blade. Also, the arbor nut