

## Tool Test

# 12-Inch Chop Saws

by Andy Beasley

**S**liding miter saws are more versatile, but they're expensive and bulky. If you can get by without the wide horizontal cutting capacity afforded by a slider, a 12-inch chop saw can save you a pile of money — and maybe even a few visits to the chiropractor.

For this review I rounded up professional-grade offerings from all the major power-tool manufacturers: single- and dual-bevel models from Bosch, DeWalt, and Hitachi; and single-bevel tools from Makita and Ridgid (which don't currently make dual-bevel models). After using these eight saws for many dusty hours, I learned a lot about what traits they share and — more important — which differences really matter.

### Key Features

Generally speaking, a single-bevel chop saw is lighter, cheaper, and simpler than its flip-flopping cousin. And it just might be all you really need: Because the vertical capacity afforded by the 12-inch blade makes it possible to miter-cut all but the largest trim pieces, many users find that they rarely use the bevel-cutting feature at all.

But if you've had to do a lot of beveling with a single-bevel saw, you've undoubtedly performed feats of gymnastics (mental and physical) to properly orient



You won't go wrong with any of these tools, but vertical cutting capacity, portability, and innovative features separate the winners from the runners-up

the cut. A dual-bevel saw won't solve all your setup problems, but more cuts in the proper orientation means fewer mistakes and faster work.

The ability to bevel both ways will set you back an additional \$60 to \$130. Depending on the brand you choose, the extra money may also get you some upgraded features that you won't find on a single-bevel tool.

**Cutting capacity.** With material lying flat on the table, all of these saws can miter a 2x6 and crosscut a 2x8. The DeWalt DW716 can actually crosscut a 2x10 in one pass, although the setup process (removing the adjustable fences and placing a spacer on the table) is cumbersome.

Real differences between the tools become apparent when molding is cut standing on edge against the fence. In this regard, the DeWalt saws stand out from the pack: Both can miter 6½-inch baseboard, and the dual-bevel

DW716 can tackle 6⅝-inch-wide crown. Maximum acceptable crown widths (assuming a 38-degree spring angle) for the other tools ranged from about 5½ to 6½ inches, while maximum heights for ¾-inch-thick baseboard varied from 4⅜ to 5½ inches. I was disappointed to discover that many of these tools were incapable of mitering a standing 1x6.

**Portability.** For lugging the machines from the truck to the job site, each has a single grip on its backbone and hand-sized cutouts at both ends of its base. Smart features like these make the 36-pound Makita a joy to carry, and the 55-pound Bosch 4212L at least bearable.

**Controls.** While all tables and saw heads moved smoothly and locked securely, some controls were easier to use than others.

The two DeWalt models have the best miter lock of the bunch; their cam-style lever is faster and easier to use than the

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screw knobs that are on the other machines (see Figure 1).

Two bevel features are noteworthy. The Bosch 4212L has a front-mounted bevel control that lets users lock and unlock the saw head and override the zero stop without reaching around the tool. And both Hitachi saws sport fine-adjustment knobs that make it easy to tweak the bevel angle without wrestling against the weight of the saw head.

I didn't like the left-hand thread on Hitachi's bevel lock lever, but I got used to it.

**Detents and overrides.** Some of these saws have as many as 11 detents on the

miter scale; none have less than nine. Although handy when you need them, these features can be a real pain when you're trying to set a precise angle that's just on the edge of one of the slots. The Bosch and DeWalt saws eliminate this annoyance with an override that prevents the detent clip from engaging. Both systems worked flawlessly, making me wish every saw were so equipped.

For cutting commonly produced crowns on the flat, all the saws include miter detents at 31.6 degrees, and all but the Hitachi and Makita tools include bevel stops at 33.9 degrees. (The Hitachi C12LDH does have a digital angle scale,

though, so setting the precise bevel is not a problem; for more on this perk, keep reading).

**Scales.** On all these tools, the miter scales are large, crisp, and easy to read. Not surprisingly, the bevel scales are tiny, fuzzy, and virtually incomprehensible. Relatively speaking, the large bevel scale on the Bosch 4212L is the best of a bad lot, but I much preferred the innovative, up-front LCD scale on the Hitachi C12LDH. With its clear, sunlight-readable digital display of the saw's settings, I relied on it exclusively when adjusting bevel angles (Figure 2, next page).

**Fences.** A good fence should be tall and square to the table. All but one of the tested brands fashion the left and right fences from a single block of aluminum, which prevents misalignment. The Hitachi tools, however, feature two separate fences that must be checked with a straightedge during the initial saw setup. During my test, one pair of Hitachi fences was spot-on, but the other required minor adjustment.

To make way for bevel cuts, five of the saws use sliding fences, which shift horizontally after a knob or lever is loosened. My favorite of these gizmos is the Bosch 4212L fence; its tall, flat faces moved easily and provided exceptional support for the work.

Instead of a sliding fence, the models from Hitachi and Makita use an inner flip fence that swings upward and out of the way to allow for bevel cutting (Figure 3, next page). These devices were quick and easy to adjust, but their irregular profiles (whether raised or lowered) made it difficult to position and secure the workpiece.

I'm sure I could get used to this arrangement, though; what troubled me more was that two of the three flip fences I tested were out of square: The top of the Makita flip fence leaned for-



**Figure 1.** DeWalt's fast-acting cam-lock miter handle (above) proved superior to the screw-in knobs on the other machines. Among bevel controls, the front-mounted lever on the Bosch 4212L was the easiest to operate (above right), and the fine adjustment knob found on both Hitachi models made dialing in the exact setting particularly easy (right). The small black (right-mounted) switch on the DeWalt and the red (center-mounted) switch on the Bosch let users override the detent functions.





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ward from plumb, and the left fence on the Hitachi C12LDH tilted forward an unacceptable  $\frac{3}{16}$  inch. In the past I've used chop saws from both manufacturers with dead-on flip fences, so I don't assume these problems are widespread — but if you're considering buying one of these models, I'd recommend checking them out first.

**Work supports.** The eight saws average less than 24 inches in width, so some sort of additional work support is a must.

Although most toolmakers offer accessory table extensions, I appreciated the ones that were included at no extra cost. The Bosch 3912 and the Ridgid have short outriggers, while the Bosch 4212L, the DeWalt DW715, and the Makita do even better: Their extensions add about 15 inches of additional support. Of this group, my favorite is the Bosch 4212L; its built-in wings are exceptionally stable and include a swing-out length stop that's handy for short repetitive cuts (Figure 4, next page).

Of course, none of these outriggers do away with the need for freestanding work supports when cutting longer pieces. With the Ridgid all you need is a pair of scrap 2x4s to fashion an impromptu



**Figure 2.** The Hitachi C12LDH's digital display made it easy to adjust angle settings, especially when cutting bevels.



**Figure 3.** To make room for bevel cuts, models from Makita (left) and Hitachi (below left) are equipped with auxiliary fences that instantly flip out of the way; other makers' fences must be unfastened and slid away from the blade. Although convenient, two of the three flip fences tested were improperly aligned. The left fence on the Hitachi C12LDH was out of square by a full  $\frac{3}{16}$  inch (below).



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work support system, because its base is exactly 3½ inches high.

**Trigger lock.** I'm in favor of almost any safety device on power tools, but I was disappointed that four of the saws (the Makita, the Ridgid, and both Bosches) have a trigger lock-off button that must be depressed before the trigger will function. The worst is the one on the Bosch 3912: for left-hand use, it's unwieldy and

annoying (Figure 5). The one on the Bosch 4212L is the least offensive because the tool's superb four-position grip offers a variety of handholds.

**Blade guard.** All the guards provide adequate protection throughout the saws' range of motion. During some cuts, however, it's necessary to lift the guard by hand to improve visibility or to prevent interference with the material being cut.

Since I typically use my left hand to hold the stock against the fence, I prefer saws that let me raise the guard an inch or so with the thumb on my trigger hand (Figure 6, next page). The best saws for this technique are the DeWalts and Hitachi; they locate the guards close to the triggers and — just as critical — don't have trigger locks to complicate the procedure. One negative about the DeWalt saws, though, is that their blade guard offers resistance near the end of the saw head's downward travel, requiring a tug of extra pressure to complete the cut.

**Laser beams.** As far as I'm concerned, lasers are overrated — but I do find them handy for two applications: cutting highly profiled moldings and using high bevel angles. In each case the red line helps me visualize the blade's cutting path. Of the tools I tested, all but the Makita and the Bosch 3912 offer laser cutting guides, either as standard equipment or as aftermarket add-ons.

I found two types of lasers (Figure 7, next page). One mounts in place of the outer blade washer and displays a line to the left of the blade, but only when the saw is turned on. The other mounts on the rear of the tool, powered by its own switch; the line is adjustable to either side of the blade. Both are primarily indoor accessories, because neither can display a visible line in bright sunlight.

The Ridgid and the Bosch 4212L use

**Figure 4.** The Bosch 4212L includes the most useful auxiliary table extension as standard equipment (right). With Ridgid's 3½-inch table height, any scrap 2x4 can serve as a makeshift work support (below).



**Figure 5.** Four of the saws tested were outfitted with trigger-lock safety switches, the best and worst of which were on the Bosch models. Depressing the safety override (red button) along with the trigger on the Bosch 3912 (right) can be a stretch, especially for left-handers. The Bosch 4212L (far right) features a four-position adjustable grip that maximizes comfort.





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the blade-washer laser, which — for my work style — is worse than useless. I'm very fond of my fingers, so my most important safety rule is never to adjust the material being cut while the blade is spinning — yet these arbor lasers encourage users to do exactly that by illuminating only when the saw is running.

Both Hitachi saws are armed with rear-mounted lasers. With their separate power switches, turning on the red line for special cutting setups was a snap, as was turning it off for other operations. The DeWalt saws offer an adjustable, switch-controlled laser as an accessory.

**Stability.** Even when they weren't screwed down, the saws were uniformly steady and showed no tendency to walk or slip. The only problem I had was when I unlocked the front bevel control on the Bosch 4212L for the first time and nearly flipped the saw off the back of my stand; either the tool should be attached to a table or its front should be held down when the bevel lock is raised. The Hitachis have a handy rear stabilizer, which is a good thing because the mounting holes in their saw feet are the wrong size for common screws (Figure 8, page 8).

All the tools can be securely clamped to a work surface, although clamps attached to the front feet can sometimes interfere with the miter lock handle and thus rob the saw of a few degrees of miter capacity. Fortunately, the clamps I used (standard Jorgensen light-duty quick-action clamps) never kept a saw from cutting a 45 miter. I found that they worked best on the two DeWalts and the Ridgid; the Makita's small sloping feet were the least clamp-friendly.

**Dust collection.** No single tool stood out in this regard. Each came equipped with a rear dust port that accepted either a dust bag or — with the proper connection — a vacuum hose. Without exception, dust collection was marginal



**Figure 6.** Sometimes it's necessary to raise the blade guard slightly to start a cut. The guards on the DeWalt (left) and Hitachi models were the easiest to elevate using only the trigger-hand thumb.



**Figure 7.** The rear-mounted laser on both Hitachi saws is bright, accurate, and powered by its own switch (left). Arbor-mounted lasers, such as this one on the Ridgid model (right), operate only when the blade is spinning.

when the bag was attached. Using the vacuum brought slightly better results but all the tools still kicked up clouds of sawdust. None are clean enough to set up inside unprotected occupied spaces.

**Blade changes.** Changing blades is a straightforward process, but some saws make it easier than others. The two Hitachis are the best: Since their metal arbor cover swings downward, it never interferes with the blade guard and there's no chance you'll forget to reattach it. At the other end of the spectrum is the Makita, which won my "Three Hands" award for its cumbersome blade-changing procedure: First you rotate the arbor cover in one direction while pushing the blade guard in the other, and then you

hold the arbor lock and turn the wrench.

**Best accessory.** I'm a sucker for clever attachments, so I fell for the combination crown stop/length stop that came with the Bosch 4212L. It's a great trim accessory that moves quickly out of its stowed position to hold crown molding or serve as a length stop for short materials (Figure 9, page 8).

## Testing and Results

When it comes to choosing a miter saw, my criteria are probably the same as yours: The tool must be powerful, accurate, smooth-cutting, and easy to use.

**Power.** All the saws are equipped with 15-amp motors. I tested their strength

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**Bosch 3912**



**DeWalt DW715**



**Hitachi C12FCH**



**Makita LS1221**

	<b>Bosch 3912</b> boschtools.com	<b>DeWalt DW715</b> dewalt.com	<b>Hitachi C12FCH</b> hitachipowertools.com	<b>Makita LS1221</b> makita.com
<b>Bevel</b>	single	single	single	single
<b>Street price</b>	\$310	\$330	\$250	\$300
<b>Weight</b>	43 lb.	43 lb.	42 lb.	36 lb.
<b>Miter range</b>	52° left, 52° right	50° left, 50° right	52° left, 52° right	48° left, 48° right
<b>Bevel range</b>	50° left, 3° right	48° left, 2° right	48° left, 3° right	45° left, 0° right
<b>Vertical capacity* (3/4-inch material)</b>	5 1/2 inches	6 1/2 inches	5 3/8 inches	5 3/8 inches
<b>Upright crown capacity**</b>	5 3/4 inches	5 3/4 inches	5 1/2 inches	5 1/2 inches
<b>Miter detent override?</b>	Yes	Yes	No	No
<b>Trigger lock?</b>	Yes, difficult for left thumb	No	No	Yes
<b>Laser?</b>	No	Available as accessory	Yes, adjustable, rear-mount, separate switch	No
<b>Comments</b>	Sliding fence; small left table extension; best material clamp; unwieldy blade change; excessively stiff miter-detent trigger	Best miter lock; accessible blade guard; best cutting smoothness with standard blade; best vertical capac- ity; sliding fence; one work support provided	Bevel-angle fine- adjustment knob; accessible blade guard; flip fence (not problematic)	Lightest saw; smoothest cutting results with Forrest Chopmaster; two work supports; most unhandy blade change; troublesome flip fence

\*Vertical capacity measured at 45° right miter

\*\*38° spring angle



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**Ridgid MS1250LZ1**



**Bosch 4212L**



**DeWalt DW716**



**Hitachi C12LDH**

	<b>Ridgid MS1250LZ1</b> ridgid.com	<b>Bosch 4212L</b> boschtools.com	<b>DeWalt DW716</b> dewalt.com	<b>Hitachi C12LDH</b> hitachipowertools.com
<b>Bevel</b>	single	double	double	double
<b>Street price</b>	\$280	\$370	\$400	\$375
<b>Weight</b>	49 lb.	55 lb.	44 lb.	47 lb.
<b>Miter range</b>	47° left, 47° right	52° left, 52° right	50° left, 50° right	52° left, 52° right
<b>Bevel range</b>	48° left, 3° right	47° left, 47° right	48° left, 48° right	48° left, 48° right
<b>Vertical capacity*</b> (3/4-inch material)	4 <sup>3</sup> / <sub>8</sub> inches	5 inches	6 <sup>1</sup> / <sub>2</sub> inches	5 <sup>1</sup> / <sub>4</sub> inches
<b>Upright crown capacity**</b>	5 <sup>1</sup> / <sub>2</sub> inches	5 <sup>3</sup> / <sub>4</sub> inches	6 <sup>5</sup> / <sub>8</sub> inches	6 <sup>1</sup> / <sub>2</sub> inches
<b>Miter detent override?</b>	No	Yes	Yes	No
<b>Trigger lock?</b>	Yes	Yes	No	No
<b>Laser?</b>	Yes, arbor washer	Yes, arbor washer	Available as accessory	Yes, adjustable, rear-mount, separate switch
<b>Comments</b>	3 <sup>1</sup> / <sub>2</sub> -inch table height allows use of 2x4s as work support; sliding fence; bolt-on table extension; horizontal material clamp gets in way	Excellent sliding fences; pull-out table extension on each side; convenient front-mounted bevel control; heaviest saw	Sliding fences; best miter lock; accessible blade guard; best vertical capacity; can cross-cut 2x10	Unique LCD miter/bevel-angle display; accessible blade guard; bevel-angle fine-adjustment knob; widest miter and bevel ranges; problematic flip fences



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under load as they cut through an oak blank 2½ inches thick and 5½ inches wide. To standardize the test, I hung a weight from each saw head and timed the tool as it cut through the block. The results were so close, any differences were insignificant. Evaluated subjectively during other tests, the Makita seemed the most powerful, while the Hitachi C12FCH had to work the hardest to keep up.

**Accuracy.** Out of the carton, the Bosch 4212L and the two DeWalt saws were square in the three critical measure-

ments: blade-to-table, blade-to-fence, and fence-to-table. However, except for the problematic flip fences, I was able to adjust all the saws so they cut accurate miters, bevels, and compound angles. In general these adjustments were easy to make, with one slight exception: With the Hitachis, squaring the blade to the fence required an awkward reach underneath the tool to access the necessary bolts.

**Smoothness.** To measure smoothness of cut, I made various crosscuts through an oak blank 1½ inches thick and 7¼ inches wide. I looked for saw marks and burns, and used a straightedge and feeler gauges to measure how much the blades deflected or wobbled during cuts. Because most of the saws came with general-purpose blades, I repeated the test using my favorite finish blade, an 80-tooth Chopmaster from Forrest Manufacturing Co. ([www.forrestblades.com](http://www.forrestblades.com)).

All the saws performed well with their standard blades. The Hitachi C12FCH showed the most wobble, but the unevenness was only about .008 inch. DeWalt's DW715 won the first heat, deviating only .0025 inch from perfectly straight. All saws kicked their game up a notch when using the Forrest blade; in

that test, the Makita took first place, performing close to perfect.

**Ease of operation.** A tool that's easy to handle can make work seem less like work, so how a saw operates is almost as important as how well it cuts. I really appreciated the many useful features of the Bosch 4212L: up-front bevel controls, detent override, work supports, and the adjustable trigger grip. I also liked working with the two DeWalts. Although lacking in gee-whiz features, they're sturdily built, with an easily accessible blade guard, the best miter lock of the group, and no obnoxious trigger lock.

### Choosing the Best

Whether it's an election, a ball game, or a beauty pageant, every competition should produce a clear winner—or so we hope. But choosing the best saw wasn't easy, because all the tools performed quite well.

If you do a lot of beveling, I recommend the dual-bevel DeWalt DW716. Although pricey, it cuts superbly, operates easily, boasts the greatest cutting capacity, and is easy to carry. The Bosch 4212L is a terrific saw with many clever features, but its weight and limited vertical cutting capacity make it slightly less attractive. If not for its troublesome flip fence, the Hitachi C12LDH, with its innovative angle display, would also be at the top of my list.

For users who don't need to bevel both ways, I suggest the DeWalt DW715. With this tool, you get a saw that's the equal of its big brother in most other aspects—for about \$70 less.

The remaining four saws are solid, workmanlike machines. If the price is right, or a particular feature appeals to you, it's unlikely you'll be disappointed.

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**Figure 8.** The Hitachi saws include two different-sized mounting holes in the base. Surprisingly, neither fits a standard drywall (or deck) screw without the use of washers or some other modification.



**Figure 9.** The adjustable crown stop supplied with the Bosch 4212L takes the guesswork out of positioning crown molding for upright cuts.