Compact Sliding Compound-Miter Saws

Could a smaller saw, maybe even a cordless, handle everything you really need to cut on the job?

Hitachi introduced the first modern sliding compound-miter saw in 1988. With only an 8½-inch blade, this sliding saw cut wider boards than standard chop saws with 10-inch blades. It changed the way carpenters work, and it launched a whole new category of tool.

Nearly three decades later, the flagship models in the pro lines are 10- and 12-inch sliding compound-miter saws with dual-beveling capacity and features like digital-angle readouts and hinged sliding mechanisms. The compact saws reviewed here don't have any of these features. But they are lighter and less expensive than their big brothers, making them worth a good look.

Bosch, Hitachi, and Makita all make corded 8½-inch saws, but DeWalt discontinued its version a few years back. However, thanks to lithium-ion battery technology and higher-efficiency motors, DeWalt and Makita now make 18-volt cordless saws. To crank out enough power, they use smaller blades—DeWalt's is 7¼ inches and Makita's is 7½ inches. Despite this limitation, the DeWalt has the second best vertical cutting capacity, and the Makita boasts a horizontal crosscut capacity to match the corded sliders.

CUTTING CAPACITY IS CRITICAL, BUT CONFUSING

The main limitation of any miter saw is the height it can cut through material held vertically against the fence (vertical cut height). For miter joints in baseboard, chair rail, and window aprons (with their tiny returns), cutting with the material held vertically against the saw fence is faster and more accurate than cutting with the stock laid flat and the saw head tilted at a 45-degree bevel. Besides the relative difficulty of tweaking the bevel angle slightly to fine-tune a miter joint, the diagonal force applied to the sliding head can deflect the saw's arm slightly and affect the accuracy of the cut.

To increase the vertical cutting capacity of miter saws, some manufacturers put a notch in the blade housing on the left side of the blade, which lets you use the back half of the blade, above the level of the arbor bolt and washer, for cutting. The Bosch and the DeWalt reviewed here have this feature, but even with a notch in the guard, the motor housing to the right side of the blade will often be lower and limit cutting height. As a result, there are two ways to measure vertical cutting capacity.

One is a vertical "through cut" where the piece of wood standing against the fence goes beyond both the left and right sides of the blade, passing under the motor housing to the right. These cuts are typically made in chop mode with the sliding head locked all the way back on the rails. The second is a vertical "shave cut" used for fine-tuning; the material is held to the left of the blade and the waste piece is small enough not to extend under the motor housing.

Even with these distinctions, vertical cutting capacity will depend on whether you're cutting at 90 degrees or at 45 degrees. And it also varies depending on whether you're cutting square-edged 1-by stock or profiled baseboard that's thinner at the top and thicker at the bottom. (The DeWalt is the only saw here that will through-cut a standing 1x4, thanks to a notch in the upper guard that continues to the right side of the blade.) But when you're cutting profiled base, the thinner top edge fits up higher into the guard's notch and allows a greater depth of cut. All of the vertical cut capacities listed in the specs are maximums, meaning I was cutting profiled material at 90 degrees. (To line up the tallest vertical cuts into the notches of the Bosch and DeWalt saws, you will have to lock down the saw head a bit forward of its farthest back position.)

Ten- and 12-inch saws will always offer greater vertical cutting capacity than the compact models. And with the taller baseboards going into houses today, this alone may steer you toward a bigger saw. However, for mitering door and window trim or making square cuts to meet plinth blocks, rosettes, and lintels,

CORDED 8 1/2-INCH SAWS

BOSCH CM8S

Motor: 12 amps; 5,600 rpm; no brake
Miter angle (in degrees): 54 left to 60 right; stops at 0, 15, 22.5, 31.6, 45 (also 60 to right)
Bevel angle (in degrees): -2 to 47; stops at -2, 0, 22.5, 33.9, 45, 47
Horizontal cut width: 12 1/2 inches at 90 deg., 8 13/16 inches at 45 deg.
Horizontal cut depth: 3 3/8-inch shave cut; 3-inch through cut
Vertical cut height: 4 3/4-inch shave cut; 3 1/2-inch through cut
Dust-bag collection (50 cuts of 2x4): 94.4 grams
Weight: 37 pounds
Price: $449
Includes: 48-tooth blade; dust bag; material clamp; onboard wrench
Country of origin: China
Performance: Not the smoothest or most comfortable to use, but it boasts the tallest vertical cutting capacity in the test.
Comments: Has a lot of premium features. It's also plagued with some awkward ergonomics and operational limitations—for one, the lack of a motor brake.
Pro: Tall notch in the left side of the upper blade guard allows for the tallest vertical shave cuts of any saw in the class.
Only saw with a miter detent lockout to allow smooth passage across the entire miter scale. Most advanced bevel-angle setting with simple bevel-locking lever within easy reach and with multiple angle stops. Easiest saw to tweak the bevel angle slightly.
Nice one-finger trigger and easy-to-reach trigger-lockout buttons. Saw handle is centered behind blade for easier left-handed use.
Left and right sides of the saw table extend outward on sliding arms to provide support 6 inches further out.
Ramp leading out of the blade channel does a great job of keeping the blade channel clear of scraps. A scrap deflector surrounding the blade prevents scraps from becoming lodged in the guard and flying out later.
Effective dust collection into stationary dust bag that doesn't dump out when tilting the saw head forward.
Easy blade changing.
Con: Kicks on with a jerk and loud motor sound at startup. No motor brake.
Table extensions must be opened to access entire miter range of saw.
Saw travel awkward, starts too high up for economy of motion, and the excessive spring tension combats the ease of use.
This saw showed the most deflection on wide, beveled crosscuts—1/16 inch out of square over 9 inches.
The only corded saw without a work light.

these smaller saws don't represent any real compromise as long as your materials aren't wider than the saw's horizontal cutting capacity. This is a measure of the width a saw will cut with the board laid flat. But keep in mind that horizontal cutting capacity is smaller at a 45-degree miter angle than it is at 90 degrees.

The final measure of cutting capacity is "horizontal cut depth," or the maximum thickness of a board you can lay flat and crosscut. This is determined by the blade's arbor washer hitting the face of the material to the left of the blade for a shave cut or the motor housing hitting to the right of the blade for a through cut. You can sometimes get around this limit by making separate chop cuts on the front and back sides of a board, which is how the 8 ½-inch-blade saws can shave cut through a 4x4.

COMMON FEATURES

All five of the saws tested are single-bevel saws and come standard with blades, dust bags, material hold-down clamps, and blade wrenches. I tested them with identical 48-tooth blades on the 8 ½-inch saws to level the playing field, but I had to use stock blades on the two cordless models. Makita's 7 ½-inch blade is a unique size, and while 7 ¼ inches is a common size for circular saw blades, the stock blade on the DeWalt is the only one I could find with enough teeth and the proper rake angle for use in a sliding miter saw.

BLADE BRAKES AID EFFICIENCY

A motor brake is an important feature for working safely and efficiently on a miter saw. When you are creeping up on a cut line or making any sort of repetitive cut, it's annoying to have to wait for the motor to wind down before making your next cut. The same goes for reaching under the blade to grab a small cutoff or holding

CORDED 8 1/2-INCH SAWS

HITACHI C8FSHE

Motor: 9.2 amps; 5,500 rpm; brake
Miter angle (in degrees): 47 left to 58 right; stops at 0, 15, 22.5, 31.6, 45
Bevel angle (in degrees): -7 to 50; stops at -7, 0, 33.9, 45, 50
Horizontal cut width: 12 3/4 inches at 90 deg., 9 inches at 45 deg.
Horizontal cut depth: 3 3/8-inch shave cut; 3 1/16-inch through cut
Vertical cut height: 3 3/4-inch shave cut; 2 7/8-inch through cut
Dust-bag collection (50 cuts of 2x4): 135.3 grams
Weight: 32 pounds
Price: $349; C8FSE version without light and laser, $279
Includes: 24-tooth blade; dust bag; material clamp; loose wrench
Country of origin: China

Performance: Overall a capable performer, but with harsh motor operation and some features a little rough around the edges. Also has the shortest vertical through-cut capacity among the corded saws, though plenty of horizontal cut capacity.
Comments: Hitachi may have premiered 8 1/2-inch sliding miter saws, but this latest model doesn't lead the pack in test results. It lacks the premium feel of the competition and even ships with a 24-tooth construction blade, which seems to say that it's not made for the finest trim work.
Pro: Motor brake. Showed no deflection on 9-inch-wide beveled crosscut.
Nice one-finger trigger and no trigger-lockout button to get in the way.
Nice grippy handle with textured rubber contours.
The best LED light of any saw tested, mounted on a flexible arm to point where it's needed and bright enough to add illumination in daylight. Paired up with the only laser guide in the test.
Most effective dust collection into dust bag. A lot of dust blows out a hole at the top of the dust bag, but that positive airflow is probably what makes it work so well.
Easy blade changing.
Con: Kicks on with a jerk and very loud motor sound at startup. Similar jerk and noise when the brake engages accompanied by a strong, hot-motor smell.
Cutoff scraps—even big ones—often get sucked into the upper guard and are later ejected as shrapnel when they make unexpected contact with the blade.
Adjustments required: came with inaccurate bevel settings and the left and right fences out of parallel with each other.

down the saw head while the little return piece you just cut rattles against the still-spinning blade, always an instant away from catching on a tooth and going airborne. All miter saws should have a motor brake, and it's disappointing that the Bosch and DeWalt don't.

EXTENSIONS HELP ON SMALLER SAWS

Because these saws have such small footprints, extensions to help support stock can be more helpful than on large saws with wider table surfaces. Solid table surfaces to the left of the blade run from 7¼ to 9½ inches on these saws. Makita's saws come with solid steel extension arms that stick out 9 inches from both sides of the table but can be left off the saw when not needed. Support on the Bosch saw can be expanded via extension arms that allow both sides of the table to slide out up to 6 inches.

KEEPING CUTOFFS FROM GOING AIRBORNE

Though not usually thought of as a performance feature, the channel for the blade has a few notable components. The plastic inserts along both sides of the channel come from the factory set wide open so the blade won't hit them while bevel cutting, but if you are doing non-beveled miter and crosscuts, it helps to move them close to the blade. That way small cutoffs won't clog up the blade channel or go zinging off as shrapnel after making contact with the blade. All but the DeWalt saw have adjustable plastic inserts.

Also useful are simple slots in the blade channel that let the sawdust drain out. Without the holes, the channels fill up quickly and have to be blown out or vacuumed. Leaving the channels full adds a lot more airborne dust with every cut as the blade dips down into this "sawdust dispenser." The DeWalt

CORDED 8 1/2-INCH SAWS

MAKITA LS0815F

Motor: 10.5 amps; 5,000 rpm; brake
Miter angle (in degrees): 52 left to 62 right; stops at 0, 15, 22.5, 31.6, 45, (also 50 to left and 60 to right)
Bevel angle (in degrees): -5 to 49; stops at -5, 0, 45, 49
Horizontal cut width: 12 7/16 inches at 90 deg., 8 3/4 inches at 45 deg.
Horizontal cut depth: 3 3/8-inch shave cut; 3 1/8-inch through cut
Vertical cut height: 3 3/4-inch shave cut; 3 1/2-inch through cut
Dust-bag collection (50 cuts of 2x4): 69.1 grams
Weight: 31.1 pounds
Price: $348
Includes: 48-tooth blade; dust bag; material clamp; side support arms; onboard wrench; plastic set-up square
Country of origin: China
Performance: Nicest motor and brake action and the best overall feel and ergonomics in use. Plenty of power and cut capacity overall, though not the tallest vertical cutter.
Comments: The most refined trim saw in the test and a real pleasure to use. Seems like the classic tool among the competition.
Pro: Motor electronics with soft-start feature provides smoothest activation, relatively quiet operation, and fast yet gentle motor brake. Showed no deflection on 9-inch-wide beveled crosscut.
Removable extension arms add a point of support 9 inches out from both sides (or just one side) of the saw table.
Single dust slot in the blade channel does an okay job of letting the sawdust drain out.
LED work light helps illuminate the saw-table surface in dark areas.
Con: Difficult bevel-scale visibility and no recognition of the 33.9-degree angle used when cutting crown on the flat. Bevel stops a bit indeterminate, feel soft.
Whole-hand trigger and thumb button trigger lockout on the back of the handle make for uncertain grip. Feels like nothing is holding tight to the handle and requires extra hand movement to push lockout and then tighten grip.
LED light leaves the saw teeth you are trying to align with your pencil line deep in the shadows much of the time.
Medium-difficult blade changing.
Adjustments required: came with inaccurate bevel settings.

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and corded Makita both have slots, but the multiple slots of the DeWalt do a much better job.

The Bosch saw even has a little ramp leading out of the blade channel that allows errant cutoffs to slide up and out effortlessly. Other saws trap thin scraps in their channels where they have to be fished out manually or are forcibly ejected when the blade strikes them.

SOME LIGHTS ARE BETTER THAN OTHERS

LED lights and laser guides are nice features, but typically don't help when you're cutting outside in daylight. Using something of a combination of the two, the DeWalt features a cut-line light that projects a shadow of the blade against the material. This light goes on automatically with each pull of the trigger or can be switched on manually. Since you have to move the blade right against your material to line up the shadow of the teeth with your pencil line, I find it easier just to sight along the outside of a tooth like I do with all miter saws. But the light does help in shadowy indoor conditions.

The Hitachi features both a laser line and an LED light, and curiously, the light can be switched on only if the laser is switched on, though they have separate switches. The laser is fine and the light works wonderfully. It's super-bright and is mounted on an adjustable arm that lets you point it where you need it. It's even bright enough to be of help outdoors.

The corded Makita has a manually switched LED that works okay as a general work light, but its position usually keeps the tooth you are trying to line up with your pencil line obscured in shadow.

THE BOTTOM LINE

If you're like me, and you rely on your miter saw to cut miters on tall standing trim, then you may never give up your

CORDLESS 7 1/4- AND 7 1/2-INCH SAWS

DEWALT DCS361M1

Motor: 3,750 rpm; no brake
Battery: 18-volt (20-volt nominal), 4.0 amp-hour
Blade: 7 1/4-inch, 40-tooth, 7-degree rake angle
Miter angle (in degrees): 49 left to 48 right; stops at 0, 10, 15, 22.5, 31.6, 45
Bevel angle (in degrees): -3 to 48; stops at 0, 45; marks at 22.5, 33.9
Horizontal cut width: 8 1/8 inches at 90 deg., 5 13/16 inches at 45 deg.
Horizontal cut depth: 2 15/16-inch shave cut; 2 1/2-inch through cut
Vertical cut height: 3 3/4-inch shave cut; 3 3/4-inch through cut
Runtime (cuts of 2x4 on a battery charge): 166
Dust-bag collection (50 cuts of 2x4): 46.9 grams
Weight: 31.6 pounds

Price: Kit, $399; DCS361B bare tool, $319
Includes: Battery; charger; blade; dust bag; material clamp; onboard wrench
Country of origin: Tool, Mexico; battery, Japan
Performance: Cuts twice as fast and long as the Makita. Great vertical capacity, but limited horizontal cut width.
Comments: Impressive cutting ability for an 18-volt cordless saw. Useful for a range of building projects—not just cutting trim.
Pro: Smooth starts, quiet operation.
Tall and wide notch through both sides of the upper blade guard allows for the tallest vertical through cuts of any saw in the test.
Horizontal handle and trigger with embedded lockout lever easy to use.
Multiple dust slots in the blade channel do the best job of letting the sawdust drain out.
Cut-line light helps to illuminate pencil line in shadowy conditions.
Con: No motor brake, but quick run-down time of 1 1/2 seconds is tolerable.
Most limited miter range among compact sliders.
Mark for 33.9-degree crown-molding angle on bevel scale, but no stop. Requires tool to bypass 0- and 45-degree bevel stops.
Slight deflection (1/32 inch out of square) on 8-inch-wide beveled crosscut.
Blade channel inserts not adjustable toward the blade, so this saw collects the most scraps in the blade channel.
Sub-par dust collection.
Adjustments required: came with fence bowed out .020 inch.
Only saw without an adjustment for blade depth, so can't be used for cutting dadoes and rabbets.

big saw. But if you work with extra-tall trim, and you're already cutting it on the flat with the saw head beveled, one of these smaller saws just might help save your back.

Among the 8 1/2-inch corded saws, I was split on picking a favorite. Basically, if you want the tallest vertical cut capacity for standing trim (up to 4 3/4 inches), the Bosch CM8S is the clear choice. But if you can get along with 3 3/4 inches of vertical cutting, the Makita is a nicer saw to operate overall. The Bosch has superior bevel-setting features, which are nice whenever you use them, but the soft-start and quick braking action of the Makita make it a joy to use compared with the jolting start and long run-down time of the Bosch. If the Bosch had the finesse of these key features, I would have liked it better, but as it is, the Makita LS0815F defines the smooth-operating, fine-trim-cutting tool in this class.

Trailing the others is the Hitachi C8FSHE. It's a decent workhorse, but it lacked the premium feel and features of the other two, and the motor and brake action of the tool are best defined as harsh.

As for the two cordless saws, there were large differences in performance worth noting. If you need crosscuts as wide as the corded saws offer (up to 12 3/8 inches) the Makita XSL01 is the only one with this capacity, but it was a slow and timid cutter. While the DeWalt saw is limited to crosscuts of 8 1/8 inches, it cut twice as fast, ran twice as long, and made vertical cuts significantly taller than the cordless Makita. Overall, the DeWalt DCS361 is the darling of the all the saws I reviewed here. It's exciting and promising to get powerful and fast cutting performance out of an 18-volt cordless miter saw.

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CORDLESS 7 1/4- AND 7 1/2-INCH SAWS

MAKITA XSL01

Motor: 2,200 rpm; brake
Battery: 18-volt, 3.0 amp-hour
Blade: 7 1/2-inch, 40-tooth, -18-degree rake angle
Miter angle (in degrees): 48 left to 58 right; stops at 0, 15, 22.5, 30, 45; mark at 31.6
Bevel angle (in degrees): -5 to 45; stops at -5, 0, 45; mark at 33.9
Horizontal cut width: 12 3/8 inches at 90 deg., 8 11/16 inches at 45 deg.
Horizontal cut depth: 2 15/16-inch shave cut; 2 11/16-inch through cut
Vertical cut height: 3 1/4-inch shave cut; 3 1/4-inch through cut
Runtime (cuts of 2x4 on a battery charge): 84
Dust-bag collection (50 cuts of 2x4): 5.4 grams
Weight: 27.3 pounds

Price: Kit, $769; XSL01Z bare tool, $450
Includes: Battery, charger, dust bag, material clamp, side support arms
Country of origin: Tool assembled in U.S.; battery, Singapore and China
Performance: Slow cutter due to very low motor rpm and extreme negative rake angle of blade teeth. Shorter runtime, too. Limited vertical cut capacity, but excellent horizontal cut width.
Comments: Though relatively low on power and runtime, this saw is the one to get if you want a cordless saw with the sliding crosscut and miter range to match the larger corded saws. This saw is essentially a cordless version of the LS0714, a corded 7 1/2-inch slider that Makita recently discontinued. It also can be easily adjusted to run a 7 1/4-inch blade.
Pro: Smooth starts, quiet operation, quick motor brake.
Showed no deflection on 9-inch-wide beveled crosscut.
Nice one-finger trigger and easy-to-reach trigger-lockout button on the back of the saw handle.
Removable extension arms add a point of support 9 inches out from both sides (or just one side) of the saw table.
Medium-easy blade changing.
Con: Miter stop at 30 degrees, not the more common 31.6 degrees used for crown.
Difficult bevel-scale visibility. There's a mark for 33.9-degree crown-molding angle on bevel scale, but no stop.
Negligible dust collection—blade much too slow to move dust effectively into the bag. Also, most of the dust pushed up toward the bag dumps out when the head is tilted forward to make cuts.

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1. The sides of the Bosch saw table extend 6 inches for added material support (see facing page for photo). Similarly, both Makita saws have removable extension arms.

2. Bosch has the most bevel-adjustment features. Seen here are the side-mounted locking lever, highly visible bevel scale, and the sliding stop-override plate that lets you reach a few degrees past zero.

3. Multiple bevel angle stops are set on the Bosch with a turret similar to those on plunge routers. Turning it past the 45 stop lets you gain a few more degrees.

4. When you're using some of these sliders on a bench top instead of on a saw stand, an adjustable-height foot under the blade channel lends support if needed. The Bosch (shown here) and both Makita saws have this feature. The small red tab above the locking knob clips over the edge of the blade channel to bypass the miter stops. This feature is exclusive to Bosch.

5. The upper fence on the corded saws must be moved to allow clearance during bevel cutting. Fences on the Makita (shown here) and Bosch slide over, while the Hitachi pivots to the outside of the lower fence to clear the way. Both cordless saws have short, stationary fences.

6. A notch in the blade housing of this Bosch miter saw provides a little extra capacity for stock that is cut vertically against the fence.

7. Some miter scales have more settings marked than others. The scale on the Hitachi is particularly busy with both degree and grade scales. As with other miter saws, the setting for perpendicular cuts

is marked as 0 degrees instead of the actual angle of 90 degrees. The same format also is used for perpendicular bevel cuts.

8. The DeWalt's cut-line light generates a shadow of the blade where it will contact the wood, but unless it's dark, it's still easier to line up the saw teeth on your line.

9. The angled light on the corded Makita doesn't help much with the cut-line aim, since it hides the teeth in contact with the wood deep in the shadows.

10. Hitachi's laser line works well enough, but its bright, adjustable light is the real shining star. It's even bright enough to help illuminate the cut line in daylight.

11. The depth of cut can be tweaked on all of the saws, except on the DeWalt, using setscrews as seen in the upper left. The screw to the left is used to fine-tune the full blade depth, while the one to the right is used for elevated depth settings for creating rudimentary dadoes and rabbets.

12. Right and left built-in carry handles are a nice touch on the DeWalt. They make it possible to carry this compact saw one-handed, like a suitcase.

13. The elegant dual-slide mechanisms of the cordless Makita saw give it the same sliding range as the larger corded saws, but it rolls up into a more compact package. Keeping the arms short also serves to reduce deflection from downward forces on the cantilevered rails.