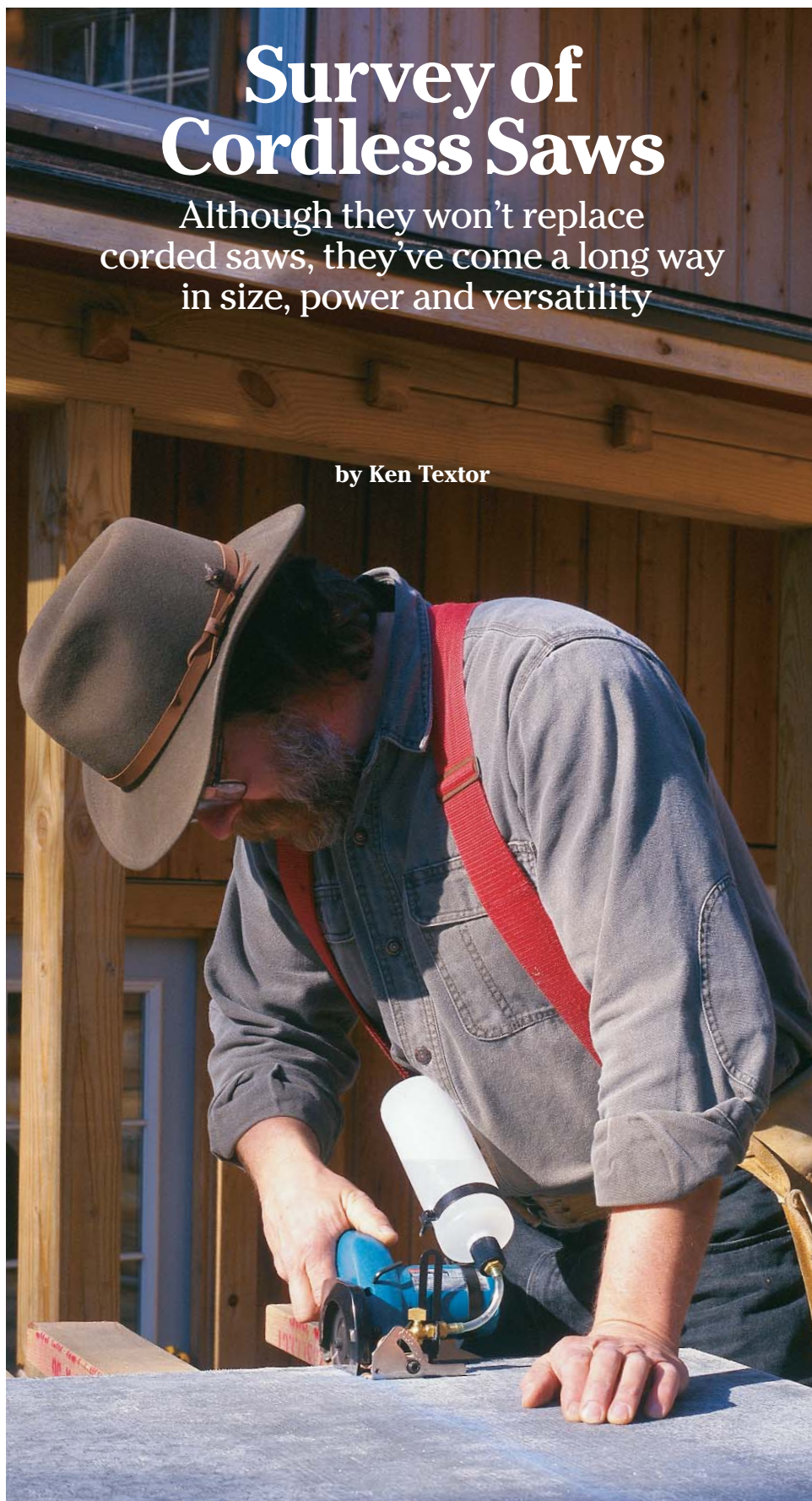


## Survey of Cordless Saws

Although they won't replace corded saws, they've come a long way in size, power and versatility

by Ken Textor



One of the first timber-frame buildings I constructed was on a site that had no power. Back in the late 1970s, all we had was a mousy little generator, barely tough enough to run the circular saw. That meant we usually drilled the ½-in. peg holes for framing members with a hand brace and bit. Toward the end of the job, one of the crew borrowed a cordless drill from a buddy. It was like taking a quantum leap from the 19th century into the 20th. Cordless drills were soon in the budget.

Like most revolutions, cordless technology has caught on quickly, spilling over into the realm of circular and reciprocating saws. As was the case with drills before them, battery-powered saws today are not meant to be substitutes for the same tools run by ordinary household current. But in many situations, cordless saws can save you the trouble of extension cords, generators and temporary power setups, often turning an annoying 15-minute chore into one simple 30-second job. And when time is money, these cordless machines can save you both.

**To try them out, I let 'em rip**—In evaluating these tools, I subjected them to both real-life work and to some artificial tasks that pushed them to their limits. For instance, with the circular saws, I set some 8x12 pine timbers on sawhorses, set the sawblades to their maximum cutting depth and started cutting. I ran the saws continuously until the batteries were discharged. I did this three or four times for each saw. I kept track of how long it took each saw to run out of power each time, averaged the times together and listed them as discharge times on the following pages. As I cut, I also noted tendencies to bind, kick back, heat up and so forth. For reciprocating saws, I lined up 2x10s and continuously cut them off.

I also used these saws for every type of job I did over a three-month period, including roofing, renovating a kitchen, framing, building a deck, installing drywall and even some tile-cutting. These jobs gave me an idea of the more vague but no less important characteristics of cordless saws. Balance, hand grips and vibration are just some of the considerations that are difficult to quantify but important to how well the saws performed on the job site.

**Cordless saws work well for quick, out-of-the-way jobs.** This 12v Makita tile-cutting and glass-cutting saw keeps a steady flow of water streaming over its diamond blade while the tool is in use.



## CORDLESS CIRCULAR SAWS

I evaluated all the wood-cutting circular saws against my ability to cut the same material with a newly sharpened handsaw, and in each case the fully charged cordless saw was about twice as fast.

Unfortunately, top performance in these cordless saws—with the exceptions of the Skil and the Panasonic—declined noticeably when the battery was more than halfway discharged. Indeed, some of the saws eventually slowed down enough to make it possible for me to keep up with them with my handsaw. Moreover, even the top performance in a cordless circular saw is a far cry from the speed and ease with which you can zip through materials with a good corded saw. When cutting wood, even the best cordless saw was 40% slower than a regular circular saw on alternating-current (AC) power.

Finally, the relatively short discharge times coupled with the long recharge times on all but the Panasonic means these saws are of limited use unless you buy one or more extra batteries for continuous recharging, which of course requires AC power where there may be none.

Then there were the left-side blade cordless saws vs. the right-side blade saws. Manufacturers of left-side blade cordless circular saws insist this positioning is done for better visibility of the cutting line. That may be. But after a lifetime of looking over the top of right-side blade saws, I had trouble staying on the lines with the left-side blade saws. My southpaw friends, however, thought the switch was fine. With left-side blade saws, I felt the need for a second handhold. Some saws provided this; others did not. Those that didn't were troublesome to use.

The smaller blades used in cordless circular saws also make accurate cutting more difficult. With less sawblade in the wood and a much lighter saw, it is easy for the cordless saw to wander off the cutting line, much easier than with an ordinary corded saw. Additionally, the toylike appearance of many of these saws makes them a potential hazard at job sites open to youngsters. Inexperienced hands should be kept far away from these saws.

I found cordless circular saws most useful in roofing tasks, especially when trimming rake boards, cutting chimney holes and the like. Running potentially dangerous extension cords across several tiers of staging and lugging a heavy corded saw up a ladder are eliminated with lightweight cordless saws. They're also handy when doing foundation or survey work, both of which rarely include on-site AC electrical power. Cutting reinforcement stakes, backing boards and the like can all be done easily with a good cordless circular saw.

### **Craftsman VersaPak (also Black & Decker VersaPak Circular Saw).**

As the least expensive of the cordless circular saws I reviewed, the VersaPak saw can be a good value provided its shortcomings are understood. It is intended more for the home do-it-yourselfer than for the professional contractor. With its six-hour battery-recharge time and with batteries designed for use in other appliances such as flashlights, hand-held vacuum cleaners and light-duty drills, the Craftsman saw would be of little use at a busy job site.

Still, with its low profile, the VersaPak saw was useful in cutting drywall, particularly electrical-outlet holes in hard-to-get-at places. It also cut thin, lightweight material with ease.

However, the saw was awkward to hold. I have normal-size hands, and I thought the grip area was too big. Also, the safety-release switch was difficult to push. The extra handhold on this saw made it easier to hew to the line, which is difficult when using a 3 $\frac{3}{8}$ -in. dia. blade with its  $\frac{1}{8}$ -in. depth of cut. The rip guide was a help when trying to stay on the cutting line. There are no further frills in this saw, though. It was the only saw reviewed that

### **Craftsman VersaPak/Black & Decker VersaPak Circular Saw**



**List price:** \$49.99 (batteries and charger \$25)/\$101 (batteries and charger \$47.95)  
**Weight:** 3 lb. 5 oz.  
**Voltage:** 7.2  
**Discharge time:** 3 min.  
**Blade size:** 3 $\frac{3}{8}$  in.  
**Phone:** (800) 377-7414/(800) 433-9258



**More for the do-it-yourselfer.** Expect mostly light duty from Craftsman's VersaPak circular saw.

### **DeWalt: DW 930K/935K/936K/Black & Decker Industrial Construction Brand**

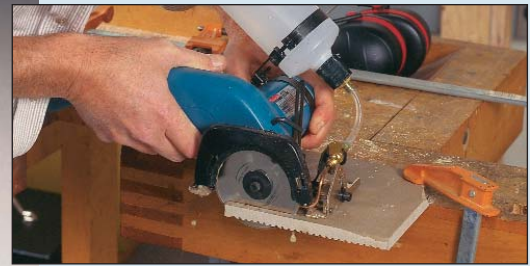


**List price:** \$370/\$444/\$458  
**Weight:** 6 lb. 8 oz./  
6 lb. 13 oz./7 lb. 6 oz.  
**Voltage:** 12.0/14.4/18.0  
**Discharge time:** 3 min./  
3 min./3 $\frac{1}{2}$  min.  
**Blade size:** 5 $\frac{1}{2}$  in.  
**Phone:** (800) 433-9258



**The biggest blade.** With a 5 $\frac{1}{2}$ -in. blade, DeWalt's cordless circular saws give greater depth of cut than other cordless circular saws.

**Makita 4190DW (glass and tile cutting)/  
5090DW/5092DW (wood cutting)**



**Cut a piece of tile without an elaborate wet-saw setup. Makita's tile- and glass-cutting saw feeds water over the workpiece to keep the blade cool.**

**List price:** \$350/\$287/\$335  
**Weight:** 4 lb. 3 oz./3 lb. 1 oz./4 lb. 8 oz.  
**Voltage:** 9.6/9.6/12.0  
**Discharge time:** 6½ min./5 min./5½ min.  
**Blade size:** 3⅝ in.  
**Phone:** (800) 462-5482

**Panasonic EY3502 Metal Cutter**



**List price:** \$500  
**Weight:** 5 lb. 7 oz.  
**Voltage:** 12.0  
**Discharge time:** 5 min.  
**Blade size:** 4⅞ in.  
**Phone:** (800) 338-0552

**Handy for quick plumbing jobs. The only metal-cutting saw of the bunch is Panasonic's cordless circular saw.**

did not include the Allen wrench needed to change the sawblade. It also lacked depth and bevel adjustments.

**DeWalt: DW 930K/935K/936K (also Black & Decker Industrial Construction Brand).** All these tools have essentially the same body, heft and design, which is good. The DeWalts and Black & Decker Industrial tools—which are identical tools at the same prices, though of different colors and sold in different types of stores—felt well balanced and much like standard circular saws. Moreover, they were the only cordless circular saws with enough blade depth (1⅝ in.) and guts to tackle standard framing stock such as 2x4s and 2x6s (bottom inset photo, p. 51). Their cutting ability was no doubt helped by a carbide blade, which is standard equipment on all models. And of course, the larger blade made it easier to stay on the cutting lines.

The DeWalts and Black & Deckers did, however, have a nasty habit of occasionally kicking back and out of the workpiece. An entire page of the instruction manual is devoted to avoiding kickback, and the advice is good. I would add the warning that kickback with one of these saws is more likely to happen when the battery is over halfway discharged.

Oddly, I didn't find much improvement in the saws' performances when moving up the scale from 12v to 18v, 2,500 rpm to 3,200 rpm. Discharge times stayed about the same, and ripping capacities were only marginally improved. Still, the tools scored well in the overall-performance sweepstakes. Their large size, however, might make them less convenient for work in tight spaces.

**Makita 4190DW (glass and tile cutting)/5090DW/5092DW (wood cutting).** As a right-handed carpenter, I felt truly at home only with the Makita saws, which were the only machines to have their blades on the right side of the motor like a conventional sidewinder. These saws, however, did not provide an additional handhold, and with such a small blade, that extra handhold would have been a help in hewing to the line (photo p. 50). Although I could stay on the lines one-handed most of the time, I found the extra handhold would have been necessary in some situations. For instance, long runs through thin plywood (½ in. or less) made it particularly challenging to hew to the line without a handhold.



## Skil 2977 (wood cutting)/2976 (tile and glass cutting)



**List price:** \$255/\$283  
**Weight:** 4 lb. 13 oz./5 lb.  
**Voltage:** 12.0  
**Discharge time:** 6 min.  
**Blade size:** 3 $\frac{3}{8}$  in.  
**Phone:** (800) 301-8255



**Easy to adjust and hold.** The Skil wood-cutting circular has an easy bevel and depth adjustment, good hand grip, but no second hand-hold for accurate steering.

The Makitas were also quieter and smoother-operating machines than most of their competitors. And the carrying case for the 12v Makita was the best-designed and seemed the most durable of all the cases for the circulars. The high-impact plastic survived with no damage some inadvertent kicking around the shop. Also, the molded cargo areas and the double-wall approach inside keeps the tools from banging around the interior or absorbing shocks during transport. The saws are durable, too. Two of the Makitas took falls off my roof staging pretty much in stride. Cutting tiles was easy and problem-free once I got the water flow adjusted properly. The adjustment operates on the same principle as a faucet at a sink.

Battery charging can be a problem, though. The Makita batteries will not recharge immediately if they've been worked too hard and gotten too warm. I had to let the batteries cool off for 15 minutes to 20 minutes before the charger would recharge them. With this in mind, a second battery will be necessary for anyone planning prolonged use. Also, the tile-cutter version did not come with a blade guard. A Makita technical representative told me that a blade guard would get in the way of the water feed. Still, this deficiency could be a hazard and a way to ruin the diamond blade if you set the saw down with the blade spinning (top inset photo, p. 52).

**Panasonic EY3502 Metal Cutter.** Plumbers, electricians and other contractors who regularly work with metals should be happy Panasonic has developed a cordless circular saw. If the cordless wood-cutting saw Panasonic plans to introduce is as good as its metal-cutting saw, it will be tough to beat. In the meanwhile, Panasonic doesn't recommend using a wood-cutting blade on its metal-cutting saw. For one thing, it can't be adjusted to cut a bevel. Second, sawdust would accumulate in the blade guard, which could be a combustion problem when cutting metal.

The Panasonic metal-cutting saw was comfortable to hold, easy to use, consistent in its cutting and gutsy. Although I tried no other saw designed to cut metal, I was pleased with the results after a session with the EY3502.

Two batteries are supplied in the standard package. Moreover, they both recharge in 15 minutes, not the one hour nearly all other cordless saws require. Unfortunately, these batteries also must cool off before recharging. But cooling-off time is less than five minutes, not the 15 minutes to 20 minutes needed for other similarly afflicted batteries.

One pleasant surprise with the EY3502 was its ability to cut without producing a lot of heat, either in the blade or in the surface being trimmed. Panasonic says the reduced heat is due to the alloy used on the cutting teeth and to a new design of the blade's teeth. Cut edges also remained remarkably smooth. Cuttings discharged well away from the cutting area, keeping the line clear and making it easy to see and stay on the lines.

The saw's safety switch is conveniently located and easy to use. Its operation is as smooth and as quiet as metal-cutting operations are likely to get. The saw cut through standard  $\frac{3}{4}$ -in. iron plumbing pipe in six seconds (bottom inset photo, facing page) and can cut unhardened ferrous metals up to  $\frac{1}{4}$  in. thick. Electrical conduit, water pipes, angle steel, C-channel, hanger rail, framing struts and rain gutters are just some of the materials it was designed to cut.

**Skil 2977 (wood cutting)/2976 (tile and glass cutting).** The Skil 2977 was the most comfortable to hold of all the wood-cutting saws. It felt the most like a standard circular saw, well balanced and meaty. Unfortunately, there's no second handhold, and as usual with the blade on the left side, I definitely needed that extra handhold to keep the blade on the line. My left hand was always instinctively grabbing for the nonexistent handhold. Staying on the lines was the most difficult with the Skil.

The Skil has a nice feature in its bevel and depth adjustments. Instead of using the wing nuts or Allen screws used on other circular saws, a cam-action, quick-release type of lever is used. The lever is convenient and easy to manipulate. This nice touch offsets the somewhat awkward location of the Skil's safety switch.

The Skil not only maintained its cutting ability for a relatively long time, but the quality of its cutting also did not sag or bog down until the battery was almost completely discharged. Unfortunately, Skil batteries are similar to Makitas in that they do not begin to recharge until the battery cools off. As with the Makita batteries, this took up to 20 minutes.

To prevent overheating the blade, Skil's tile-cutting and glass-cutting saw comes with a plastic water bottle, tube and fittings for delivering a steady drip of water to the workpiece.

*Cordless-saw survey continues on p. 54.*

## CORDLESS RECIPROCATING SAWS

My corded reciprocating saws must perform demolition tasks as well as cut fancy curves to exacting specifications in a variety of materials. So toughness and versatility are the most-important traits a cordless reciprocating saw can possess.

With the exception of the Craftsman, the saws I tried had the guts. Only the Craftsman repeatedly had trouble cutting through standard 2x framing lumber. None could hold a candle to a good corded saw, but to cut that one hole for a vent pipe, these saws can save you time.

Cordless reciprocating saws generally come in two designs: one with the blade set at a 90° angle to the hand grip and the other with the blade set in line with the hand grip. The 90° saw is more commonly known as a jigsaw or saber saw and has the advantage of being able to make finer, more accurate cuts. The in-line style works best in hard-to-reach places. I

think people who plan to buy cordless saws should have plenty of experience with both circular and reciprocating saws before deciding which type they want. One saw you will see on the shelves but not in this survey is the new DeWalt 18v reciprocating saw. It didn't make it out in time for this article.

**Craftsman 911264/Black & Decker VersaPak Jig Saw.** This in-line saw might be useful for a few cuts in drywall or lightweight plywood. But beyond that, the reciprocating Craftsman was a pretty disappointing cordless. The hand grip is too big to be held tightly for more than a few minutes, and the tool's balance felt askew. Likewise, the safety switch is difficult to access from the grip area.

**Makita 4390DW/4300DW.** The 90° model Makita was by far the most comfortable tool of all cordless saws to hold for extended periods. The safety switch wasn't quite as easy to reach as it could be, but the saw's balance was excellent. Its in-line counterpart was a little less comfortable to use, though it was the best of the smaller in-line models. Its safety switch was easy to access, too.

As with their cordless circular brethren, these two Makitas needed a 15-minute to 20-minute cooling-off period if the batteries got too warm during use. So buying extra batteries might be wise if extended use is anticipated. Both came with Allen wrenches stowed in a handy spot, ready for immediate use when changing blades.

**Metabo EP-140.** In these days of lawsuit mania, it's surprising that a tool manufacturer would neglect to include a safety lock on any potentially harmful cutting device. But Metabo's 90° cordless reciprocating saw lacks this feature, and it should therefore be kept extremely far from young and/or inept fingers.

Beyond that, the Metabo had an uncomfortable hand grip that got warm when the machine was run out of its full charge. In fact, it got so warm that I had to think seriously of putting on a glove the next time I used it. Otherwise, the tool had plenty of power but was somewhat lacking in good balance (inset photo right, facing page).

Still, the Metabo cut well and had several adjustments that no other cordless reciprocating saw included. There were six speed settings, which are useful when cutting light metals, plastics and other common non-wood construction materials. This saw also allows users to vary the orbital action for everything from slow, fine cuts to quick, rough cuts.

### Craftsman 911264/Black & Decker VersaPak Jig Saw



**List price:** \$49.99/\$69.95  
**Weight:** 2 lb. 8 oz.  
**Voltage:** 7.2  
**Discharge time:** 3 min.



**Okay for a quick trim of thin material.** Another in the Craftsman VersaPak line, this reciprocating saw is light in weight and duty.

### Makita 4390DW/4300DW



**List price:** \$274/\$261  
**Weight:** 3 lb. 1 oz./3 lb. 5 oz.  
**Voltage:** 9.6  
**Discharge time:** 4½ min./ 6 min.



**It zipped right through 3/8-in. plywood.** With a handgrip identical to its circular-saw cousin, the Makita in-line reciprocating saw is good for quick cutouts in plywood and drywall.



**Milwaukee 6516-02.** This is the Arnold Schwarzenegger of cordless reciprocating saws, the one you reach for when big, tough jobs come along. It has plenty of power, plus the quickest standard recharging capability of all comparable saws. When worked hard, though, the battery did need a cooling-off time of about 10 minutes.

Basically a battery-powered version of the famous Milwaukee Sawzall, the 6516-02 also seems destined to find its most appropriate niche in the heavy-construction, renovation and demolition worlds. At nearly 9 lb., this cordless saw has the heft and guts to cut through nails, 2xs and anything else that might get in its way. Because of its weight, it might be a little challenging to work with this saw all day. But you could get a heck of a lot done in such a day.

Obviously, this is not the saw to choose when fine cuts are required. Tight curves and work in lightweight materials would be difficult to keep from looking hacked up. Then again, you wouldn't choose a sledgehammer for driving finish nails.

Another particularly nice feature was its handy system for changing blades quickly. A twist-lock mechanism is used in place of the Allen wrench other cordless saws require (bottom inset photo). Thus you don't have to worry about losing that little Allen wrench. Multiple blade changes so common in demolition work are made nearly problem-free.

**Some final thoughts about the state of cordless technology**—Cordless-tool manufacturers should consider making a direct-current (DC) battery charger available in addition to the normal AC charger. It's easy to imagine situations where a cordless tool will run out of juice at a location with no AC power. However, a DC charger could be plugged into an idling pickup truck.

Selling a cordless tool without a second battery should be punishable by fines and/or imprisonment. It makes little sense to offer a cordless tool without giving a second battery along with it. If you're in the middle of a job and the battery reaches complete discharge, you're out of luck for a half-hour or more.

Finally, if I had to choose a cordless circular saw today, I'd go with the 12v DeWalt. I like its larger blade size, which gives me the ability to cut 2xs as well as planks and plywood. The 14v and 18v versions didn't seem to offer much more power or longevity for the added price.

But if I could wait on the purchase of a cordless circular saw, I would do so. For the price paid, these machines should be better than they are—with the exception of the Panasonic metal-cutting saw. As was the case

with cordless drills, I suspect the manufacturers now know about these shortcomings and will come out with new and improved versions in the not-so-distant future. Among reciprocating saws, the choice is easy: I'd buy the Milwaukee Sawzall for any type of heavy work and the Makita 90° version for more-refined cutting. Both did their jobs well, and only battery discharge and recharge times need to be improved. □

*Ken Textor is a boat builder and furniture maker in Arrowsic, Maine, and the author of two books on sailing. Photos by Scott Phillips (studio) and Steve Culpepper (insets).*

### Metabo EP-140



**List price:** \$354  
**Weight:** 4 lb.  
**Voltage:** 9.6  
**Discharge time:** 7½ min.  
**Phone:** (800) 638-2264

**A good saw for punch-list jobs.** Metabo's cordless jig-saw has six speed settings but heats up when used for extended periods of time.

### Milwaukee 6516-02



**List price:** \$550 (\$655 with two batteries)  
**Weight:** 8 lb. 13 oz.  
**Voltage:** 18.0  
**Discharge time:** 5 min.  
**Phone:** (800) 414-6527



**A knob for quick blade change.** The Milwaukee cordless Sawzall comes with a hard rubber twist knob that allows the operator to replace the blade by hand without having to find an Allen wrench.