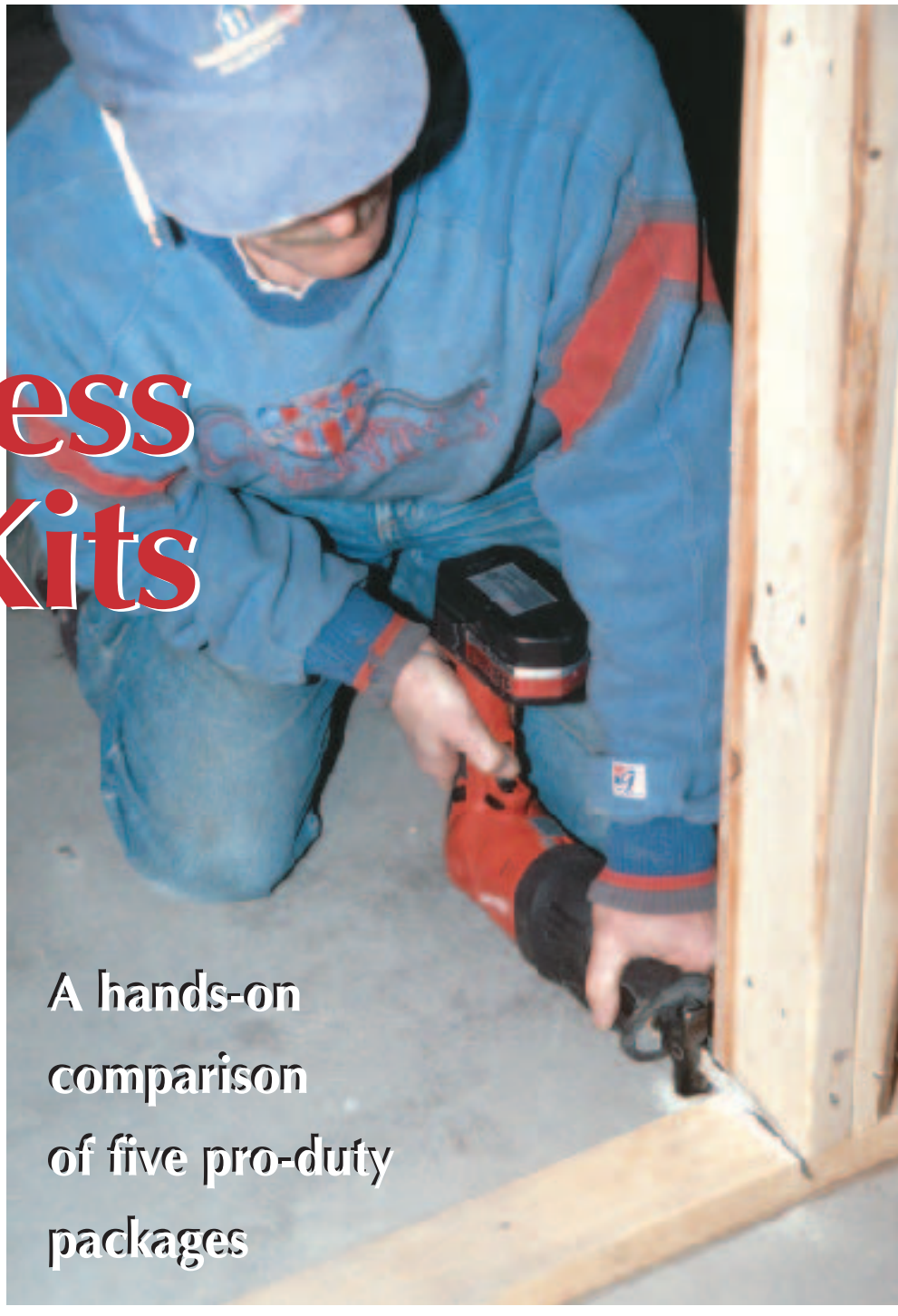
Cordless Tool Kits



A hands-on comparison of five pro-duty packages

by David Frane

It used to be when a carpenter hollered, "Hand me a cordless," everyone knew he was asking for a drill-driver. That was the only kind of cordless tool there was. Advances in battery technology mean you can now get cordless versions of bigger, more powerful tools like demo hammers, miter saws, jigsaws, and routers. But if you're a carpenter, the three power tools you absolutely can't live without are a circular saw, a recip saw, and a drill. So for this article I decided to look at cordless kits that contain those three items. Other combinations are available, but this group contains the basic tools of the trade.

The kits I tested cost $500 to $600. It sounds like a lot, but it's considerably less than you'd pay if you bought the tools one at a time. The savings comes from running three tools off two batteries and a single charger. If you buy the tools individually, you pay for six batteries and three chargers. Kits lower the upfront cost but not necessarily the long-term cost of owning cordless tools. That's because you're likely to buy additional batteries over the life of the equipment. And you'll probably buy more tools from that manufacturer because it's hard to switch brands once you're committed to a particular battery platform.

When it comes to kits, one size does not fit all. Tools that work for a framer may not suit a finish carpenter, or for that matter, an electrician, plumber, or hvac guy. And there are different needs

within trades. For example, a tradesman who does remodeling has good reason to be more concerned about recip saws than someone who does only new construction. And a carpenter who builds decks is more likely to need a drill-driver with the power to drive heavy lags than a guy who installs cabinets.

Drill-Driver

The last cordless tool I would do without is a drill-driver, because it has no corded equivalent. A corded drill hasn't got a clutch, and a corded screwgun hasn't got a chuck. A cordless drill-driver has both, so it's good for drilling holes and driving fasteners.

Of course, no tool that performs multiple functions is equally good for all of them. If you want to drill big holes or drive big lags, then maximum power is the name of the game. But if you're going to drive a lot of small fasteners, you'll want a lighter, more maneuverable tool. And no matter what kind of work you do, you'll want the longest run time you can get.

Hammer drill a plus. I didn't give it any thought when I ordered the tools, but the drills in the DeWalt and Porter-Cable kits have a hammer function. If you spend a lot of time drilling tile and masonry, you'll probably want a dedicated hammer drill; but a drill-driver that doubles as a hammer drill makes it easier to travel light, because you can use a single tool for everything.

Weight and power. The drill-drivers in these kits are bigger and heavier than the 12- and 14.4-volt tools I'm used to; given a choice, I'd still want to use a smaller drill-driver for most applications. That would include anything from driving drywall screws to drilling smaller holes in metal and wood. But

Kit Specifications

	Manufacturer	Bosch	DeWalt	Makita	Milwaukee	Porter-Cable
	Model	**Cordless Combo Pack 3960CRK**	**Combo Kit DW4KIT-2**	**DK1021BL**	**Bag Combo Kit 6514.27**	**Quad Pack 9887QP**
	Street price	$599	$569	$579	$519	$569
Batteries	# batteries	2	2	2	2	2
	Voltage	24	18	18	18	19.2
	Amp-hours	2	2.4	2.2	2.4	2
	Type	Nicad	Nicad	NiMH	Nicad	Nicad
	Cost of extra battery	$139	$79	$85	$75	$85
Drill-Driver	Hammer function	no	yes	no	no	yes
	Speed control/ rpm	2-stage/ 0-1300	3-stage/ 0-2000	2-stage/ 0-1400	2-stage/ 0-1500	2-stage/ 0-1500
	# 3/4" holes in 2x4 per charge	137	103	95	118	107
	Weight in pounds	6.2	5.95	5.5	5.6	5.5
Recip Saw	Strokes per minute	0-2300	0-2800	0-2700	0-2700	0-2900
	Length of stroke in inches	3/4 and 1 1/4	7/8	7/8	3/4	1
	# 2x4s cut per charge	52	49	37	36	43
	Weight in pounds	8.7	6.5	7.7	8.25	9
Circular Saw	Blade diameter in inches	6 1/2	6 1/2	6 1/2	6 1/2	6
	Rpm	3600	3700	2600	3200	3250
	# 2x4s cut per charge	115	140	108	140	115
	Weight in pounds	9.2	8.4	7.5	9.1	9.5
Kit	Accessories	flashlight, rip fence, auxiliary handle, plastic case	flexible flashlight, rip fence, plastic case	flashlight, rip fence, zippered contractor bag	flashlight, rip fence, auxiliary handle, plastic case	flashlight, plastic case

Porter-Cable's kit is one of two that comes with a hammer drill; the other is DeWalt's.

Battery Power

Cords are cheap and, if you're careful, will last the life of the tool. But batteries are expensive and have to be replaced after a certain number of charge-discharge cycles. The number of cycles you get depends on the battery, the charger, and the way you use the tool. I've heard all kinds of numbers for the life cycle of batteries, anywhere from 750 to 2,000 charges. Whatever the actual number is, it's safe to say a professional tool will outlive the batteries that come with it. So before you commit to a particular cordless system, you should consider the quality of the batteries and the cost to replace them.

Run time. One of the most important features of a cordless tool is its run time, how long it will go on a single charge. Basic design features like the efficiency of the motor and the way the tool is geared have a big effect on run time, but the most important factor is the storage capacity of the battery.

The amount of power that can be stored in a battery is a function of its voltage and amp-hour rating. Voltage is determined by the type and number of cells in the battery pack. One way to increase stored power is to raise the voltage. But doing that means increasing the size and weight of the battery. Past a certain point, the tool becomes so heavy it's easier to use one that has a cord.

The amp-hour rating of a battery is a measure of how densely chemical energy can be packed into individual cells. The higher the number, the more energy the cell will hold. Right now, state of the art is 3.0 amp-hours. The kits I tested come with batteries rated between 2.0 and 2.4 amp-hours, which is typical of the current crop of pro-grade tools. Until recently, all cordless tools used nickel cadmium (Nicad) batteries, but a small number of manufacturers have started using nickel metal hydride (NiMH) cells because they can hold more energy per unit of volume than Nicads. Not everyone is ready to jump on the NiMH bandwagon, though. Some manufacturers (the ones that use Nicads) claim that NiMH cells have a shorter lifespan than Nicads. Among the tools covered in this article, however, only Makita's uses NiMH cells, and the Nicads that come with the DeWalt and Milwaukee tools have a higher amp-hour rating.

the big drills that come in the kits are handy for heavy-duty applications like boring doors for hardware, drilling studs for romex, and driving large lag bolts in structural framing.

For some reason, I found myself gravitating toward the Makita and Milwaukee drills whenever I had to drive drywall screws or drill small holes. I liked their feel and balance, and when I checked the specs, I realized they're also two of the lightest models. At 5 1/2 to 6 pounds and up, none of the drills in these kits would be considered light.

Normally, I'd test a drill-driver's run time by driving a whole lot of drywall screws. But these tools have such high-capacity batteries that it would have taken all day. And since drills this size are designed to handle large bits and fasteners, I tested them by using a 3/4-inch auger to drill holes through 2-by lumber. It was faster than driving drywall screws, but it still took a long time to run the batteries down. I got anywhere from 95 to 137 holes per charge. The Bosch drilled the most holes, and the Makita the least. This squares with my sense of the relative power of those particular tools. When I took them on a remodeling job, I used each drill to drive a 1-inch auger through dry Doug fir joists. The Bosch drill had no trouble, but the Makita struggled.

Additional features. All the drills have 1/2-inch chucks and 15 to 20 clutch settings. Most of them have two speed ranges and top out at around 1,500 rpm. DeWalt's drill is the exception; it has three speed ranges and tops out at 2,000 rpm. Three models come with auxiliary handles. I prefer the ones from Makita and DeWalt because they can be positioned at any angle to the motor housing. Bosch's auxiliary handle projects left and right only.

Favorite drills. If I was selecting a kit on the basis of the drill that comes with

it, I'd choose DeWalt or Milwaukee. The DeWalt drill is compact and powerful and has a hammer function. The Milwaukee tool is light and compact and has good run time.

Bosch's recip saw has a dual-stroke option. The short stroke is for smooth cuts, and the long stroke is for fast cuts.

Recip Saws

I'm a big fan of cordless recip saws. They don't have the run time to do continuous heavy demo work, but they're good for the kind of tasks that drive carpenters crazy. I'm thinking of the times you have to slither through an attic or crawlspace, or climb a tall ladder to make a few cuts. Half the time, your extension cord comes unplugged or a breaker blows before you can finish the job. That won't happen if the saw is cordless.

Bosch's blade clamp is easier to get at than the other, shaft-mounted mechanisms. You operate it by pressing down on the red tab.

The Milwaukee Hatchet is the only model that has an orbital cutting mode. Even so, it's not one of the faster-cutting saws I tried. But the Hatchet has one feature that's unique, a housing that pivots in the middle. This makes it easier to work in tight quarters because you can change the shape of the tool. If you fold it all the way, it fits sideways in a $14\frac{1}{2}$-inch stud bay. Milwaukee also sells a cordless kit with a more traditional recip saw. Porter-Cable's saw is very compact as well, though it won't fit in a stud bay.

Unlike those of other recip saws, DeWalt's blade clamp is on the side of the gear housing where it's easy to get at, even if you have gloves on.

All the saws I tested have keyless blade clamps that will hold a blade forward or reversed. You operate most of them by manipulating a spring-loaded gizmo on the end of the shaft. My favorite clamp is on the DeWalt saw. You operate it by retracting a lever on the side of the gear housing. It's easy to get at with gloves on, and it doesn't spring shut if you let go of it. In a pinch, you can hold this saw between your knees and change blades one handed.

The coolness of this feature is partially offset by the fact that the foot on DeWalt's saw doesn't adjust in and out. I prefer an adjustable foot because it lets you use more of the blade. It also allows you to limit how far the blade goes in when you're cutting something that has pipes or wires behind it. The feet on the Bosch, Makita, and Milwaukee adjust without tools. Porter-Cable's foot can be adjusted with an Allen key.

Speed and power. The Bosch and Porter-Cable saws cut faster and feel more powerful than the other tools. On paper, it looks like the Bosch should be slower because it cuts 2,300 strokes per minute (spm) to Porter-Cable's 2,900. But the Bosch has a dual-stroke option that allows you to make smooth cuts at

Depth of cut is especially easy to set on the Bosch saw because of the large scale on the back of the housing.

the 3/4-inch setting and fast cuts at the 1 1/4-inch setting. The DeWalt saw is also quite speedy, but it seems to vibrate more than others. This is probably due to its light weight. Porter-Cable's saw is heavier than the rest and vibrates the least.

Favorite recip saws. If I was choosing a kit on the basis of which recip saw I liked the best, I'd choose Porter-Cable, Milwaukee, or DeWalt. I like Porter-Cable's saw because it's compact, powerful, and smooth. I like Milwaukee's saw because the bendable handle makes it easier to maneuver than other models. And I like DeWalt's saw because it's light, fast, and has good run time.

Porter-Cable's circular saw has a dust port that can be connected to a vacuum or collection bag. Without the bag, you can use it to direct dust away from your line of cut.

The Milwaukee tools come in a zippered gate-mouth bag that has room for additional tools and supplies. It's easy to load because you can put the tools in any way you want.

Circular Saws

Most of the circular saws in these kits take 6 1/2-inch blades. The only exception is the Porter-Cable tool, which takes a 6-inch blade. Cordless saws that take 7 1/4-inch blades are available, but none of them comes in a kit with a recip saw and drill-driver. All the saws I tested will cut a 2-by on a 45-degree angle, which is all the depth you need for most applications.

Some of the cordless saws sound a little like corded tools, but none of them cut as fast or powerfully. You wouldn't want to use them for production framing, but they're fine for small jobs and punch work.

It's hard to compare the power of cordless circular saws, because each one has a different blade. In general, fewer teeth mean faster cuts. DeWalt's has 16 teeth, Bosch's and Porter-Cable's have 18, and Makita's and Milwaukee's have 24. The saws all work at full depth of cut, it's just a matter of how fast you can push them. My feeling was that I could push the Milwaukee and Bosch saws a little faster than the others. I went the slowest with Makita's saw.

Run time. Run time is more important than power for the kind of things I'd do with a cordless circ saw. To test run time, I put a fresh battery in each saw and cut as many 2x4s as I could. The DeWalt and Milwaukee tied for first with 140 cuts. Bosch and Porter-Cable tied for second with 115. The Makita cut 108.

Depth and bevel setting are about the same as you'd see on corded models. There were a couple of features of

note. The depth scale and lock knob on the Bosch are on the back end of the blade housing; the knob is easy to get at, and the scale is especially easy to read. The lever that locks the bevel on the Porter-Cable hangs past the right side of the base. This is normally not a problem, but if you guide with a speed-square while cutting left handed, the lever can get hung up on the square.

All of the saws have safeties, which are equally annoying for left- or right-hand use. I like Makita's the best because it's on top of the handle, where it's easy to get at. Some of the others forced me to alter my grip, but then I've got small hands. The only way to find out if you like the way a saw feels is to grab it and see what you think.

The saws range in weight from 7.5 to 9.5 pounds, so there's a noticeable difference between the lightest and the heaviest. That said, all the saws weigh less than the average 15-amp corded model. I like to think I get something for carrying extra weight, but that's not the case with these saws. Porter-Cable's saw is 25% heavier than Makita's, but it doesn't make anything like 25% more cuts per charge.

Favorite circular saws. If I was choosing a kit based on the circular saw, I'd consider Makita and Milwaukee. Makita's saw is compact, well balanced, and significantly lighter than the rest. The Milwaukee is powerful and well balanced and has more run time than most other saws.

Cases and Accessories

A case is an important accessory, especially for a cordless kit, which includes chargers, multiple batteries, and easy-to-lose items like wrenches and rip fences. Most of the kits come with a plastic, suitcase-style case. The tools go in only one way, so loading them can be like assembling a Chinese puzzle. DeWalt's suitcase is the only one that allows you to stow the recip saw with a 6-inch blade in it. My favorite is the gate-mouth nylon bag that comes with Milwaukee's kit. It has a shoulder strap and pockets for other tools, and you can throw the tools in any way you like.

Some of the cordless kits come with flashlights. I always figure manufacturers throw these in so they can claim the kit has four rather than three tools. I wouldn't pay extra to get one, but the flashlights are handy, especially for work in attics and crawlspaces. They're stable enough to stay aimed where you point them, and they throw off a lot of light. They're more reliable than a clamp light because the bulb is protected and there's no cord to come unplugged.

A last thing to consider when buying a kit is what other tools use the same batteries. DeWalt offers a broad cordless line that includes an 18-volt rotary hammer, jigsaw, and plate joiner. Porter-Cable recently introduced a 19.2-volt router and jigsaw. And Bosch makes a 24-volt compound miter saw.

My Favorite Kits

My overall favorite is Milwaukee's kit. I like everything about the drill-driver and circular saw and appreciate the versatility of a recip saw that folds. The nylon storage case is easier to load than a hard plastic case and has room to hold other tools and supplies. Not to mention it's $50 cheaper than the other kits. I'd also consider Makita's kit. The drill-driver and circular saw are comfortable to use and as light as any I tested. The recip saw is nothing flashy, but it does the job.

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Sources

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