

# 12v Li-Ion Compact Drills

Each of these eight pint-size tools is light, powerful, and affordable, but which is the best?

BY PAUL JOHNSON

I'm one of those people who believe that you can never have too many drills. That said, I'm always on the lookout for the drill-driver that could take the place of the multiple drills that I otherwise need to bring to a job. The new generation of 12v Li-ion drill-drivers brings a lot of the speed and power of larger drills into a compact, lightweight package. None of these drills will take the place of a full-size model, but most are worthy of consideration for the majority of daily tasks.

## Compact drills come in two styles

Although most of the drills in this review are also available with a hex-bit chuck, I chose to review only models that had keyless chucks. The hex-bit drills are excellent in high-torque situations, but keyless chucks have more versatility because they accept both driver and drill bits. Also, in the end, keyless chucks add a level of potential complexity that separates one drill from another.

The eight drills I tested come in two different styles. The DeWalt, Hitachi, and Ryobi models have a flat battery that makes the tool a little larger in overall size, but allows it to be set down on its base without falling. The Bosch, Makita, Milwaukee, Porter-Cable, and Ridgid models have a stick-style battery inserted into the handle. These drills are smaller overall and are easier to slip into the pocket of a tool belt. However, the grips are fatter to accommodate the battery, most can't be set down on their battery, and they are prone to heating up during heavy use.

Each drill came with a case, two Li-ion batteries, and a battery charger. All but one came with a 30-minute charger that really does charge the battery from zero to full in about 30 minutes. (The exception was the Ryobi, which had a 40-minute charger.)

After using the drills in the field and back in the shop (see "How we tested," p. 70), it became clear which were the standouts and which couldn't keep up.

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DEWALT  
DCD710S2

Weight: 2 lb. 10 oz.  
Price: \$160



**FEATURES** Even though it's on the heavier side, the DeWalt's superb balance makes it feel lighter than the other models. The stick-style battery has a paddle release button, making it by far the easiest to remove. In fact, it was the only battery I was able to change while wearing gloves. The attached wide-open belt hook makes it easy to hang the drill off a pocket or a belt. An even match with the Bosch for overall power, this drill easily handled all my tests and powered through the toughest conditions. But this tool's high-speed drilling capacity is what set it above and beyond the other models in this review. It's on par with many 14.4v drills I've used, and in a much smaller package. It was the only tool tested that didn't shut down when boring a 2<sup>1</sup>/<sub>8</sub>-in. hole through a solid-core door while in high gear. Only long-term use will determine whether this tenacious motor is that much better than its competitors, or just plain suicidal. With that kind of power, though, this tool will certainly prove itself useful every day on the job.

**FLAWS** The pinpoint LED lightbulb can easily become covered with debris while drilling upward. Although I found it handy, I know some builders who dislike the type of small duffel-style bag sold with this drill compared to a hard or soft-side carrying case. Although the margins aren't huge, this model was the most expensive.

**BOTTOM LINE** When I needed to grab one drill to perform a task, time and again I found myself reaching for the DeWalt. After weeks of testing, there is no doubt that this drill-driver is the best overall.



## HITACHI DS10DFL

**Weight:** 2 lb. 8 oz.  
**Price:** \$85

**FEATURES** This drill is the only one other than the Milwaukee that has a molded plastic case, a bonus for transporting tools through the wet weather here in the Pacific Northwest. It also includes a small case of driver bits, which is a nice perk at this price point.

**FLAWS** The Hitachi and the Ryobi are the only two drills that don't lock up when you release the trigger. The LED light is not very bright and is positioned so that it creates a large shadow right where the bit or screw is located. Also, while all the other drills have rubber grips wherever a hand might grab during use, this tool is mostly hard plastic, making it less comfortable for extended use. Finally, the top-mounted speed-selector switch was difficult to slide between high and low positions.

**BOTTOM LINE** This is a fine little drill-driver for many smaller jobs, but it didn't stand up to the competition on a number of tasks. Surprisingly, it could sink a 3-in. screw all the way into a 6x6 without flinching, but then it petered out during heavy drilling and repeated driving.

## RYOBI HJP002K

**Weight:** 2 lb. 10 oz.  
**Price:** \$80

**FEATURES** Unfortunately, the only real standout feature of the Ryobi is the small magnetic bit tray on its base.

**FLAWS** With only one speed—a no-load speed of 600 rpm—this drill runs at close to double the speed of the other drills' low gear but well under half the speed of their high gear. As a result, it works decently for driving but is slow for drilling. The Ryobi is also the only drill without an LED light, making it somewhat prehistoric compared to the others. The Ryobi had little power in all the tests, and it was the only model unable to drill at all when chucked up with the hole saw.

**BOTTOM LINE** The Ryobi fared poorly in all the tasks I put it through. Other than its price—the lowest of all the drills—I found no compelling reasons for choosing this drill when just a few dollars more would buy the Hitachi, which can easily outperform it. With no LED light and only a single speed, this drill isn't in the same class as the others it was up against.

## HOW WE TESTED

The focus was to find out how each of these tools worked as both a drill and a driver, and whether any had features to set it above and beyond the competition. Could they handle everyday light-duty jobs such as installing cabinet hardware as well as tortuous tasks such as drilling out for a door lockset with a hole saw?

Over the course of my testing period, I used the drills on three different projects: a set of reproduction outdoor slatted tables; a full staircase renovation with new skirts, treads, risers, newels, and iron balusters; and a down-to-the-studs bathroom remodel.

For the outdoor tables, I put the drills through their paces by drilling pilot holes for and countersinking a few hundred 2¼-in. stainless-steel trim-head screws into vertical-grain fir. For the stair-remodel job, I gave them a further workout by drilling ½-in.-dia. by 1½-in.-deep holes for 75 or so iron balusters. As part of the bathroom remodel, I installed five new solid frame-and-panel interior doors into existing jambs and abused the drills by drilling and prepping the 1-in. and 2⅞-in. holes for the new locksets. I also used them for less taxing jobs such as installing all of the new bathroom hardware.

When I brought the drills back to the shop, I pushed their limits again by repeatedly driving 3-in. screws into a kiln-dried Douglas-fir 6x6 post in both low and high gear, and drilling ¾-in.-dia. holes in the same post, also in low and high gear.



### BOSCH PS31-2A

**Weight:** 2 lb. 2 oz.  
**Price:** \$130

**FEATURES** This drill was the champion of torque when driving screws, made even better by its soft-start feature, which helped it to ease into sinking and removing screws without stripping out the heads. Its drilling speed and power were on par with the other top contenders, but still shy of the DeWalt. Like the Milwaukee, this tool has a battery gauge, but the Bosch gauge stays on longer after the trigger is pulled. This is the shortest, most compact drill, and because the slightly triangular handle grip is wide in front and tapered in the rear, it has a comfortable, ergonomic feel.

**FLAWS** Filtered through a piece of clear plastic, the LED bulb is distorted and dim, barely illuminating the work area right in front of it.

**BOTTOM LINE** If it weren't for the drilling prowess of the DeWalt, this would be my top choice. It has the most torque of the bunch, good drilling power, and a nice, compact design.

### MAKITA FD02W

**Weight:** 2 lb. 6 oz.  
**Price:** \$120

**FEATURES** Although it's average in power and speed, the Makita has a feature that no other drill has: a light that stays on after the trigger has been released. After using it for a while, it makes you wonder why every drill doesn't have the same feature. This drill also comes with a belt holster, which is unique in this field and may be a real plus for anybody constantly going up and down a ladder or spending most of the day on their feet with an otherwise full tool belt.

**FLAWS** The drill labored a bit when sinking 3-in. screws, and the speed-selector switch is stiff. Like the DeWalt, its lightbulb is set in a small depression that can fill with debris. The stick-style grip is the widest diameter of the bunch.

**BOTTOM LINE** The Makita is a solid drill that feels great in the hand and has an excellent light. Nobody would be ashamed to show up on a job site with this little drill.



## MILWAUKEE 2410-22

**Weight:** 2 lb. 10 oz.  
**Price:** \$130

**FEATURES** Milwaukee pioneered the concept of an onboard battery gauge, which I hope will become standard on all cordless tools and batteries someday. Its drill is the only one of the stick-style models that can easily stand upright when set down, a bonus over other drills of the same style. The drill comes with a sturdy molded-plastic case, which was the best in this review and had plenty of room for extra bits.

**FLAWS** Because it's heavy and bulky, this model is less comfortable to use for extended periods of time. It also was the only drill that I was able to get smoking when sinking 3-in. screws in high gear. Finally, it tended to shut itself off quite easily under pressure, which will probably extend its life but can be an annoyance.

**BOTTOM LINE** The Milwaukee has the same no-load speed as the DeWalt and almost as much torque as the Bosch, but it didn't perform as well as either. It still had more power than the rest of the drills, though, so it is my third choice after the DeWalt and the Bosch.

## PORTER-CABLE PCL120DCC-2

**Weight:** 2 lb. 6 oz.  
**Price:** \$115

**FEATURES** A well-designed magnetic bit holder on the top of this drill's motor housing holds bits securely and without fuss. Likewise, the rethought belt clip is mounted on the motor housing rather than at the base of the handle, allowing the drill to hang at your side in a more pistol-like position. The LED light is nice and bright, and this tool has a superb battery release, second only to the DeWalt's.

**FLAWS** The attached belt clip is difficult to hook over a thick belt or pouch, and the speed-selector switch is a bit stiff.

**BOTTOM LINE** As it has no major weakness in ergonomics or operation, I would put this tool right on par with the Milwaukee, Ridgid, and Makita as a solid performer. Its extra features and lower price make it my best value.

## RIDGID R82008

**Weight:** 2 lb. 12 oz.  
**Price:** \$140

**FEATURES** This drill comes with a small accessory flashlight that operates on the same 12v battery. Its integral LED light is nice and bright, and is curved in such a way that it does not collect sawdust and debris when drilling upward. It also is tied with the Bosch for having the shortest body length—a good ½ in. shorter than the next closest model. A single release button is located on the back of the battery pack, where it's comfortable to operate.

**FLAWS** This stout little drill is chunky and top-heavy. The motor has a prominent clicking sound in high gear, and although it has a good amount of torque, it was the easiest to overload.

**BOTTOM LINE** When this drill wasn't turning itself off due to overloading, it was solid and powerful to use. The extra flashlight is small but handy to have around for working in the kinds of spaces where you would likely be using this type of drill.