

# 18-Volt Impact Drivers

**Lightweight and powerful with amazing runtimes, a new generation of lithium-ion-powered drivers make your job easier.**

by Patrick McCombe

Few tools are better suited to the special needs of a pro deck builder than a cordless impact driver. It turns deck screws and other fasteners without transferring the stress to your hands, wrists, and forearms the way drills and screwguns can. Impact drivers also have enough torque to drive lags and tighten bolts without the hassle of hoses, cords, and air compressors. It's a tool I wouldn't be without.

For this review, I tested lithium-ion drivers from DeWalt, Hitachi, Makita, Milwaukee, Porter-Cable, and Ridgid — 10 models in all. I asked for two batteries with each drill, as I wanted to be sure that a second pack could be fully charged before I drained the first.

## Why 18 Volts?

Some contractors may tell you that the 18-volt platform is overkill for an impact driver. After all, 12- and 14.4-volt models are cheaper and lighter and can deliver double or even triple the torque of an 18-volt cordless drill — plenty of power for most tasks. For many users, I agree, smaller drivers work just fine. But for deck builders, 18 volts is a better fit. The primary reason is runtime. With one exception, all these drivers spun in at least a couple of hundred

deck screws on a single charge. Two drove enough screws to fasten all the decking on a 12x12 deck (520 screws) with a single battery charge.

Eighteen-volt packs come in two sizes — Makita, Milwaukee, Porter-Cable, and Ridgid all offer two different packs for their 18-volt platforms (**Figure 1, page 4**). Commonly, the smaller pack costs and weighs less than the bigger one; manufacturers suggest using the smaller packs for light-duty and overhead work. The larger packs provide maximum runtime for heavy-duty applications and typically weigh twice as much as the smaller packs. For a deck builder, the larger packs make more sense because they drive more screws.

Makita provides a less expensive 1.5-amp-hour pack with its entry-level BTD142HW model and sells a 3.0-amp-hour LXT pack with the more expensive BTD144. I was able to use Makita's higher- and lower-rated packs (BL1830 and BL1815, respectively) with both of Makita's 18-volt impact drivers, though I've heard claims to the contrary.

The Milwaukee 2650-20 that I tested comes with two 2.8-amp-hour batteries (48-11-1828); a compact 1.5-amp-hour battery (48-11-1815) is also available.



## DeWalt DC827KL

The DeWalt has excellent balance and one of the most ergonomic housings. It did well in the runtime tests. However, it got alarmingly hot during the lag-screw test. Admittedly, the test was difficult and beyond normal use, but because heat is what kills batteries, I was left questioning its long-term durability.



## Milwaukee 2650-20

No-nonsense and plenty strong, the Milwaukee showed its colors in the runtime test. It's one of two models with a real metal gearbox. I love the battery's fuel gauge, but the tool's ergonomics — especially the grip, which I found uncomfortable — left me feeling lukewarm.



#### **Hitachi WH18DL**

Complete with flames, the older Hitachi is clearly meant to appeal to a younger crowd, but it has the longevity of an older craftsman. Too bad its clunky belt hook detracts from its overall stellar performance.



#### **Hitachi WH18DSAL**

The newer Hitachi has toned-down graphics and a more functional belt hook compared with its older sibling. But I wish it came with longer-lasting 3.0-amp-hour batteries, like the older one does, instead of 1.5-amp-hour ones.



#### **Makita BTD142HW**

Easily distinguished by its white housing, the less expensive Makita impact driver has all the ergonomic features of its big brother, the BTD144, but its manufacturer ditched the belt hook and included cheaper 1.5-amp-hour batteries to cut costs. At under \$200, it's a good option if you can live with a third the runtime.



#### **Makita BTD144**

Simply put, this tool is a pleasure to use: It's got great ergonomics, outstanding runtime, and a functional belt hook. Makita's model BTD141 — which I didn't test — has all the features of the BTD144 except for the power selection switch, for \$100 less.



#### **Porter-Cable PCL180ID**

Its venerable name couldn't help its performance in the runtime test. Clearly its batteries, which had the lowest amp-hour rating (1.1) in this field, aren't up to the job of deck building. A larger pack is available, but it isn't included in any of the Porter-Cable kits I could find. You can also buy the PCL180ID as a "tool only." With the larger battery, the tool set a respectable number of screws. However, the driver's motor overheated during the lag test.



#### **Ridgid R8823**

Sold only as a "tool only," the R8823 is short on extra features, but I can overlook that because of its very solid performance. If you already have a collection of 18-volt or 24-volt Ridgid battery packs (it takes both), this would be the driver to buy.



#### **Ridgid R86230**

Sold only as part of a five-piece combo kit with circ and recip saws, drill, and light, the 86230 seems nearly identical to the 8823 both in appearance and performance. The 86230 looks like it has a metal gearbox, but it's just paint.



#### **Ridgid R86030**

Sold only as part of a compact cordless kit with a compact drill, a recip saw, and a light, the 86030 has a slightly shorter housing than the other two Ridgid models. Its kit is sold with smaller battery packs than the R86230, which explains its diminished performance in runtime tests.

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Manufacturer	Model	Price	Torque (in inch-pounds)	RPM	3-inch screws driven in one charge	5/16 x 5-inch lags driven in one charge	Amp hours	Spare battery cost
<b>DeWalt</b> 800/433-9258 dewalt.com	DC827KL	\$329	1,330	2,400	432	33	2.0**	\$129
<b>Hitachi</b> 800/706-7337 hitachipowertools.com	WH18DL	\$296	1,330	2,600	373	31	3.0	\$83
	WH18DSAL	\$200	1,280	2,600	254	29	1.5	\$56
<b>Makita</b> 800/462-5482 makita.com	BTD142HW	\$184	1,280	2,600	208	19	1.5	\$69
	BTD144	\$345	1,420	2,300	623	41	3.0	\$79
<b>Milwaukee</b> 800/729-3878 milwaukeeool.com	2650-20	\$300	1,400	2,200	453	34	2.8	\$129
<b>Porter-Cable</b> 888/848-5175 deltaportercable.com	PCL180ID	\$70 (tool only)	1,600	2,900	359	14*	1.5	\$40
<b>Ridgid</b> 800/474-3443 ridgid.com	R8823	\$129 (tool only)	1,490	2,100	584	37	3.0	\$99
	R86230	\$469 (5-piece kit)	1,450	2,400	463	37	3.0	\$99
	R86030	\$329 (4-piece kit)	1,400	2,400	326	23	3.0	\$99

\*Tool overheated, test ended.

\*\*DeWalt publishes watt hours, not amp hours. The battery tested was marked 36 watt hours. Since watts = volts x amps, an 18-volt, 36-watt-hour battery should rate 2 amp hours.

Ridgid's model R8823 isn't sold with batteries, as it's meant to be an add-on to a user's existing collection of Ridgid cordless tools. I tested it with the larger of Ridgid's two packs (84008), because for deck builders, runtime rules.

The Porter-Cable is sold both as a tool only and with other tools as part of a kit. Although it's sold with a smaller battery when packaged with other tools, I tested it using the bigger Lithium EX pack, because a deck builder who owns this tool would be likely to upgrade. This is the only

tool that failed during testing. Using the larger battery pack, the motor started smoking and stopped turning after driving 14½ lag screws. After the tool cooled, it still worked, although whether it was permanently damaged is unknown. A second sample began to smoke after 10 lags, and the test was stopped.

### Testing

In addition to giving the impact drivers a workout during a number of deck-building and remodeling projects, I did a pair of head-to-head tests

to gauge their runtime. First, I ran as many 3-inch drywall screws as I could into a pressure-treated 6x6 before the battery showed a drop in performance. The second test was even more torturous: I ran 5/16x4-inch lag screws into pressure-treated 6x6s without predrilling.

For the lag-screw test, I started with the Makita, which had performed the best in the 3-inch screw test (see chart, above). I figured I'd get maybe a dozen lags in before the battery died. When I got to 23, I knew I had a problem: I had already cleaned out

## Tool Test: 18-Volt Impact Drivers



**Figure 1.** Several manufacturers offer two sizes of battery pack. The smaller one is lighter in weight and good for overhead work but severely reduces runtime. The larger packs are what deck builders will likely prefer.



**Figure 2.** All the drivers come with head-lights, a great idea. Most are located just below the chuck, as on this Makita. This one stays on for 10 seconds or so with a bump to the trigger.

three local suppliers of 4-inch lag screws. Fortunately, I didn't have to drive too far to find enough screws to finish the test.

Although it's suitable for few structural applications, I chose the 5/16-inch size lag because I figured it would provide resistance somewhere between large, self-drilling structural screws such as LedgerLoks and larger-sized lags going into pre-drilled holes. Not surprisingly, the best performers here also have the highest amp-hour ratings. As a rule of thumb, if you want a driver with the longest runtime, just check the amp-hour rating. Many manufacturers put it right on the pack.

### Extra Features

All the drivers in the test have LED work lights directed at the bit. Some have an amber cast, but most are bright white. They all helped illuminate the business end of the driver and proved especially useful, as you might guess, in shaded areas. Makita's light stays on for about 10 seconds when you bump the trigger, which is handy



**Figure 3.** The belt hook on the Hitachi WH18DL doubles as an aimable light.

when you're searching for a different bit or fastener (**Figure 2**). The light on the older of the two Hitachi models, WH18DL, is located at the end of the belt hook. It's the only light that can be aimed and the only one with a separate switch (**Figure 3**). It shuts off by itself after about 15 minutes, which is a good thing because it's powered by two AAAA batteries — a size I've never seen at the lumberyard.

Ridgid's lights are mounted on the bottom of the tool — different, but functional (**Figure 4, page 5**).

**Power selection.** The Makita BTD144 and Hitachi WH18DL both have power selector switches. Makita's three-position switch varies the impact action from 3,400 blows per minute to 1,300 blows per minute (**Figure 5, page 5**). It's designed to slow things down when there's a good chance of



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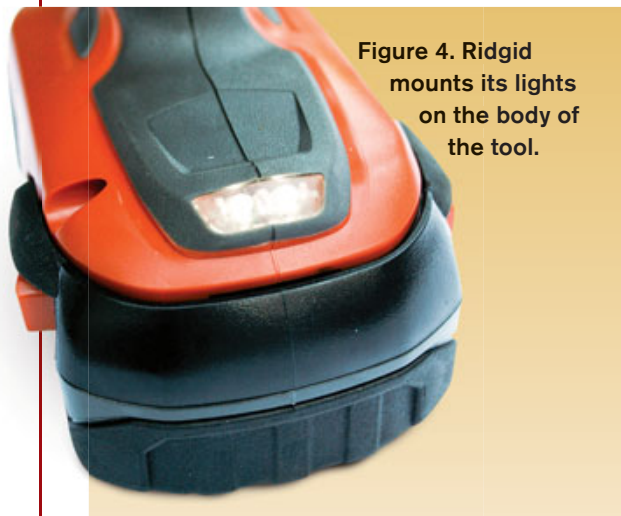


Figure 4. Ridgid mounts its lights on the body of the tool.

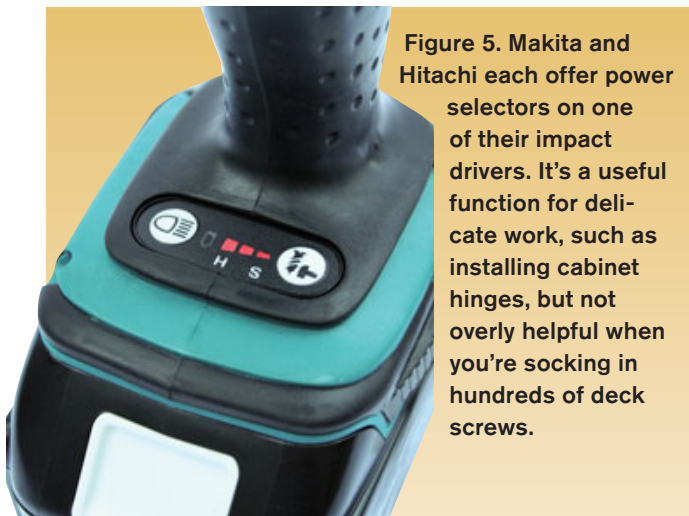


Figure 5. Makita and Hitachi each offer power selectors on one of their impact drivers. It's a useful function for delicate work, such as installing cabinet hinges, but not overly helpful when you're socking in hundreds of deck screws.

stripping fasteners. It's a good idea in concept, but I found it useful on only one occasion: when I was tightening cup hinges on a cabinet installation. I don't think deck builders would use it very often, so if you want to save \$100, you might choose the Makita BTD141, which is the same tool without the power selection feature.

The Hitachi has a two-position switch that limits the driver to about half power. It's meant to save the batteries when you don't need full power. Once again, I don't think it's a particularly useful feature for deck builders.

**Belt hooks.** I'm sure I'm not alone in thinking belt hooks should be included on every cordless drill and impact driver sold, but unfortunately, not all manufacturers have seen the light. Only five of the 10 models tested have them — both Hitachis, the Porter-Cable, the Milwaukee, and the Makita BTD144. With the exception of the one on the Hitachi WH18DL, all the belt hooks are no-nonsense metal ones that can be placed on either side of the housing (Figure 6). The WH18DL's hook — which, you may recall, doubles as a light — doesn't provide a secure grip, despite its adjustability. I wouldn't trust it working overhead or in other situations where dropping

the driver might hurt somebody or break the tool.

### The Verdict

Any of these tools would be a useful addition to the tool kit, so choosing a winner is tough. But if money were no object, I'd have to go with the Makita BTD144 because of its stellar runtime and comfortable ergonomic housing. I don't think the power selector is particularly useful for contractors who work exclusively on decks, but deck builders who do a variety of projects may find it beneficial. If you already have a collection of 18-volt Ridgid tools, however, it would be silly to look elsewhere for a driver. All three Ridgid models showed great runtime and worked well. If the company would add belt hooks, they'd be even better.

Milwaukee's driver is excellent too. It showed outstanding runtime and has a very useful "fuel gauge" on the battery, which can prevent you from climbing a ladder only to realize you're out of juice. ♦

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Figure 6. All the belt hooks are sturdy and made of metal, except the one on the Hitachi WH18DL.

**Editor's note:** We tested only one sample of each tool (except in the case of the Porter-Cable), each a limited number of times. Because of that and natural variations in the wood used for testing, you may find that the tools perform better or worse than is reported here. With that said, we believe the testing done by the author is representative of job-site conditions and provides a fair estimation of the tools' initial performance.