



Think of a cordless impact driver as a cross between an impact wrench used by auto mechanics and a conventional cordless drill. Though I had heard about

by Jeremy Hess

these tools, I had never seen anyone using one, so I was skeptical. I drive a lot of screws as a remodeler, and I thought nothing could be faster or more effective than my cordless drill. But when I was given the chance to test several of these tools for *JLC*, it didn't take me long to realize that a cordless impact driver is a superior tool for running screws. The tool's impact action makes driving 3/8-inch lags feel like you're driving drywall screws, and because impact drivers are about a third smaller than cordless drills, they fit in many places where a drill can't go. Plus, unlike my bulky 18-volt drill, they hang easily from my toolbelt.

CORDLESS Impact Drivers

Compact, lightweight, and powerful, they're the perfect tool for running screws — but wear your earplugs



How an impact driver works. A spinning hammer hits against an anvil connected to the chuck. The inertia created by the spinning hammer gives impact drivers their impressive torque and makes driving screws less tiring, but it's also what creates the tool's biggest drawback: noise.

The Tools

Generally, impact drivers are available in the same voltages (9.6 to 18) as cordless drills. To take advantage of the tools' compact size, I limited my test to 12-volt models from DeWalt, Hitachi, and Makita. I also tested 14.4 drivers from DeWalt, Makita, and Milwaukee. Even though these tools are in the middle of the pack in terms of voltage, I didn't find any fasteners they wouldn't turn. Their power and ease of use are remarkable.

Chucks and bits. All the drivers I reviewed have hex-shaped chucks designed for standard 1/4-inch hex bits, but you aren't limited to just square and Phillips. Most accessory manufacturers also offer nut drivers and other specialty bits. With an adapter, you can also use standard 1/4- and 3/8-inch drive sockets for lag screws and bolts. Manufacturers suggest using heavy-duty impact sockets for safety.

Although you can use an impact driver for drilling holes by fitting it with a hex-shank drill bit, the impact action makes this slow and inefficient. Don't expect it to replace your cordless drill.

How Impact Works

Unlike a cordless drill that relies on a motor and transmission to create torque, an impact driver uses a hammer-and-anvil mechanism inside the tool housing. As the hammer spins and strikes the anvil, it spins the driver bit in short bursts. This creates enough power to drive and even snap lag screws. Aside from increased torque, the design has another benefit. Anyone who's ever driven a long screw with a drill knows how much torque is transferred back to the operator, and how the bit tends to cam out of the screw head unless constant heavy pressure is applied. With an impact driver, the

torque transferred back to the operator is noticeably reduced, and you don't need to apply as much forward pressure to the bit. This not only makes the tool less tiring to use, but it's especially helpful when you're working in confined spaces or hanging from a ladder.

The drivers I reviewed don't start impacting until they approach 15 in-lb of torque. At low torque, the impact driver will actually run short, self-drilling screws faster than a slower-spinning conventional drill-driver. What's cool is that the tool does all of the adjustment. You don't have to flick a switch or change gears when switching from low torque to high. Just pull the trigger, and the tool does the rest.

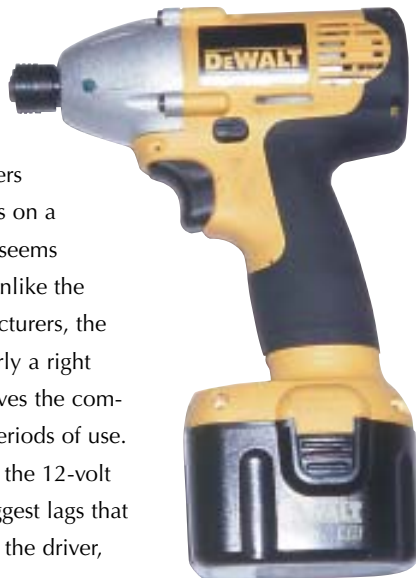
Noise Factor

This nearly effortless driving action does have one significant drawback: These things are loud. The extra noise comes from the internal hammer striking the anvil up to 3,000 times a minute. While it's not as bothersome outside, earplugs are a must when you're running the tool close to your head. When I was doing some work in a local doctor's office, the noise distracted the staff and patients so much that I had to switch to my cordless drill. Keep this in mind if you work in places where noise might be a problem.

12-Volt

DeWalt DW052K-2

The DeWalt 12-volt impact driver is the heaviest of the 12v drivers but also drove the fewest fasteners on a charge. The tool is well built and seems likely to stand up to heavy use. Unlike the impact drivers from other manufacturers, the body of the DeWalt tool is at nearly a right angle to the handle, which improves the comfort of the grip during extended periods of use. This driver has the most torque of the 12-volt drivers, and it easily drove the biggest lags that I use. The DW052k-2 kit includes the driver, two batteries, charger, and plastic case.



Hitachi WH12DM

The Hitachi WH12DM was the most convenient of all the drivers I reviewed. An adjustable belt clip keeps the tool within easy reach and provides space for an extra driver bit. This tool is so light and compact that there were a few times when I didn't realize I had it on my belt. An attached wrist strap helps keep it secure when you're working in precarious situations. Of all the drivers, this one was the most comfortable to use. The kit includes the driver, one battery, charger, and molded case. Kits with two batteries (WH12DHB) are also available.



Makita 6916D

The 12-volt impact driver from Makita was disappointing, primarily because of the tool's poor ergonomics. During a deck installation, I found that the tool's angled handle made my hand slide toward the top, where it rubbed uncomfortably against the tool's body. Also, I could actually feel the two halves of the tool twisting in my hand while driving lag screws. I don't think the tool would split in half, but it made me a little wary. The tool is well balanced, however, and the battery slid on and off easily. The 6916D kit comes with molded case, extra battery, and charger. Keep in mind that the two Makita drivers use different batteries and chargers. So if you already have some Makita tools, make sure your purchase is compatible.



14-Volt

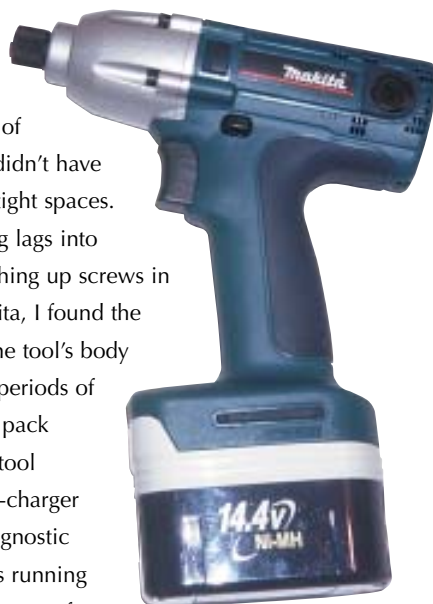
DeWalt DW054K-2

The 14.4-volt DeWalt driver is well balanced and comfortable to use and has plenty of power (it snapped two lags when they hit a hard spot in the wood during testing). The battery has the shortest run time of the 14.4-volt drivers I reviewed, so if you wanted to do sustained heavy work with this tool, you'd need to keep an extra battery and charger on hand. I had a hard time changing driver bits with this tool at times, but that may have been the fault of the particular driver I was testing. Even so, a quick pull on the trigger in the opposite direction usually snapped the bit loose. The DW054K-2 includes the driver, two battery packs, charger, and plastic case.



Makita BTD150SA

Although the Makita BTD150SA is the second largest of the impact drivers I reviewed, I didn't have too much trouble getting it into tight spaces. It had plenty of torque for driving lags into pressure-treated lumber and flushing up screws in plywood. As with the other Makita, I found the angle between the handle and the tool's body uncomfortable during extended periods of use. The somewhat large battery pack added to its tail-heavy feel. This tool makes use of a high-tech battery-charger system. When the 30-minute diagnostic charger is plugged in, a fan starts running and a series of lights informs the user of the battery's condition. Makita says this system is unique, and it's included in the kit, along with a blow-molded case and two batteries.



Milwaukee 9081-22

Even though Milwaukee's 14.4-volt driver is the largest and heaviest of those tested, its extended run time and comfortable grip made its weight and bulk easy to overlook. The aluminum gear housing proved its durability when it survived a fall from the top of a 5-foot stepladder. If I was building decks or doing other high-volume work, this is the driver I'd choose. This driver has the lowest torque rating of the 14.4-volt models, but I didn't notice any difficulty when driving large lag screws. Although the battery is reversible for tight spaces, I couldn't find an application where that feature was a benefit.

The 14.4-volt model 9081-22 includes two batteries, charger, and plastic case. The case features a nice bit storage area with a hinged lid to prevent bits from floating around during transport.



Specs and Test Results

Manufacturer	DeWalt	DeWalt	Hitachi	Makita	Makita	Milwaukee
Model	DW052K-2	DW054K-2	WH12DHB	6916D	BTD150SA	9081-22
Voltage	12v	14.4v	12v	12v	14.4v	14.4v
Street price	\$199	\$229	\$280	\$260	\$400	\$280
Weight	3.75 lbs	4.1 lbs	3.5 lbs	3.3 lbs	4.0 lbs	4.75 lbs
Torque	1,000 in-lb	1,150 in-lb	885 in-lb	887 in-lb	1,150 in-lb	950 in-lb
Tool length	6 1/2"	6 1/2"	6 1/2"	6 1/2"	7 1/2"	7 1/2"
Impact rpm (min-max)	2,400-3,000	2,400-3,000	2,300-3,000	2,300-3,000	2,300-3,000	2,200-2,500
No. 1/4x4 lag screws driven on single charge	25	27	31	36	45	60
No. 2 1/2" drywall screws driven on single charge	125	155	134	175	168	224
Cost of extra battery	\$50	\$60	\$65	\$80	\$125	\$75
Features and accessories	Case, (2) XR pack 1.7Ah NiCad batts, charger	Case, (2) XR pack 1.7Ah NiCad batts, charger	Molded case, (2) 2.0Ah NiCad batts, charger	Molded case, (2) 2.6Ah NiMH batts, charger	Molded case, (2) 2.0Ah NiMH batts, charger	Molded case, (2) 2.4Ah NiCad batts, charger

Run-Time Tests

I used the impact drivers for more than two months, on jobs ranging from decks to kitchen cabinets. In addition, I did some run-time tests to see if there were noticeable differences and if the 14.4-volt tools did any better than their 12-volt counterparts. I also wanted to see what would happen to motors and gearboxes when they were subjected to continuous operation.

Before testing, I charged and discharged the batteries four times to condition them. I then put them to the test by driving 2 1/2-inch galvanized screws and 1/4x4-inch lag screws into pressure-treated lumber. I stopped the test when I noticed a decrease in performance. Amazingly, out of the hundreds of deck screws I drove, I only had five cam out, stripping the screw's Phillips head. Running the screws was almost effortless, though I did go through a few Phillips bits.

The Verdict

After a couple of months of using impact drivers, I was hooked. The ability to effortlessly drive screws from odd

angles or while stretching is reason enough to get one. During a kitchen cabinet installation, I was able to screw two face frames together inside a 9-inch wall cabinet where my cordless drill would never have fit. And because the tools are so much lighter than a big cordless drill, I could hang one from my belt all day and not really notice.

My Picks

The best run-time winner and my favorite for running the heavy lags and driving large numbers of deck screws was the Milwaukee. It felt good in my hand and was nicely balanced. For working in confined spaces, the 14.4-volt DeWalt is a good choice; it's the same size as the 12-volt drivers, but it packs a little more punch. For lighter work and intermittent use, I liked the Hitachi because its built-in belt hook kept the tool by my side, whether I was wearing my toolbelt or not. Hitachi's built-in bit storage is handy, too. 

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