

Weigh In!

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Toolbox

BY DAVID FRANE



Milwaukee's 6.0-Ah battery (left) promises slightly more power and longer runtimes for high-torque tasks. Bosch's inductive charging system (below) charges a tool while it sits on the charger. Here, a tool is charging in the optional "mobile holster."



A Year in Batteries

2015 is shaping up to be a big year for power-tool batteries, which means it will be a big year for cordless power tools. Improvements include higher amp-hour packs, improved battery chemistries, and high-tech enhancements such as Bluetooth connectivity and inductive charging. Some of the new batteries are already out and several are scheduled for release early next year. One was recently announced in Europe, and it's only a matter of time before it becomes available in the U.S.

AMP-HOURS

Batteries were not the sexiest products announced at a recent Milwaukee media event, but they were arguably the most important. Beginning in January 2016, the company plans to offer M18 packs rated at 6.0 and (amazingly) 9.0 amp-hours.

The 6.0-Ah pack is an Extended Capacity (XC) pack with upgraded cells. In use, it promises to provide pro-

portionally greater runtime than existing 4.0- and 5.0-Ah packs, and with most tools, slightly more power. The jump to a 6.0-Ah pack was expected. Bosch already offers a 6.0-Ah battery (BAT622) in Europe, and as of this month, is offering it here.

Unlike the announcement of an upgraded XC pack, Milwaukee's announcement of a 9.0-Ah pack was completely unexpected. Half again as tall as an XC pack and about a half-pound heavier, the 9.0-Ah pack will be the first 15-cell, 18-volt pack on the market. The current standard for full-size 18-volt packs is 10 cells. The new 9.0-Ah pack will fit existing M18 tools but is not intended for use with all of them; it'd be overkill to put one on a compact drill or impact driver. The bigger packs were developed to power tools such as recip saws, circular saws, and the new "mega" tools announced at the media event—an SDS Max rotary hammer, a Super Hawg right-angle plumber's drill, and a magnetic drill press. Tools of this size



With a smartphone app, users can monitor the condition and charge of this Bluetooth battery. The app can also disable a battery that is out of range, to discourage theft.

work with XC batteries but do better with larger packs.

INDUCTIVE CHARGING

This year, Bosch introduced the world's first inductive charging system, which consists of a special charger and batteries that can be used with any Bosch lithium-ion power tool. Batteries can be charged, in or out of the tool, by placing them on the charger. A coil inside the charger sends electromagnetic waves to a coil inside the battery that converts magnetic energy to current used to charge cells.

With this system, battery amp-hours are no longer the main concern. The idea is to put the tool on the charger whenever it's not being used, so the battery is almost constantly charging. Unless you use the tool for an extended period of heavy work, the pack is unlikely to ever be depleted. Obviously, this works best when the operator is working at a single location with a tool that can easily be placed on the charger. A "mobile holster" helps make the system especially useful for service work: With the holster mounted in the truck, a tradesperson can easily recharge the battery on the way to and from jobsites.

The batteries aren't restricted to inductive charging. They can always be removed from the tool and charged in the usual manner on a standard charger.

LiHD PACKS

Metabo is about to introduce a new LiHD (Lithium-ion High Demand) pack that will surpass the Ultra-M pack introduced a cou-

ple of years ago. The 5.2-Ah Ultra-M came out when tool batteries sold in the U.S. topped out at 4.0 Ah. Until very recently, it was the highest-rated 18-volt battery sold in this country—a distinction that now belongs to the Bosch 6.0-Ah pack.

Metabo isn't worried about competition from higher-Ah battery packs. The new LiHD pack will top out at 6.2 Ah. Its claimed runtime is beyond what one would expect for an increase of 1.0 Ah—according to the manufacturer, the new pack will yield 87% more runtime (based on testing with a grinder cutting sheet steel) than the company's current 5.2-Ah pack. Even more surprising is the claimed increase in power of the LiHD—67% over 5.2-Ah Li-ion packs. Metabo claims the increased power output is the result of better cell chemistry, larger battery contacts and cell connectors, and improved alloys used in contacts and connectors.

The new batteries were recently announced in Europe, and it's only a matter of time before they're available stateside. Metabo's take on the LiHD pack is similar to Milwaukee's take on its 9.0-Ah pack: The new packs will boost the performance and runtime of existing tools and allow the company to introduce tools that until now have been difficult to run without cords. One example Metabo points to is an 18-volt slide miter saw that is currently sold in Europe but has yet to be offered here. Metabo makes a lot of grinders and tools for drilling and chipping concrete, so there are likely some new cordless products coming in those categories.

BLUETOOTH BATTERY PACKS

At a media event held in June at its assembly plant in North Carolina, DeWalt announced the world's first Bluetooth tool battery. Designed to be used with the free Tool Connect App, the packs can be monitored and "controlled" by Android and Apple devices.

The app is designed to provide diagnostics, actions, and alerts. Diagnostics include measuring temperature, condition, and state of charge of the cells. Actions include the ability to disable a battery when it is out of range (so it can't be used by someone who steals it). And alerts allow you to be notified when the battery overheats or is low on charge, or when charging has been completed.

In my opinion, the most useful things the battery/app combination can do are to notify you when charging is complete and to disable batteries when they are out of range. If Bluetooth batteries take off, then perhaps there will be increased functionality in the future: the ability to display tool diagnostics, charging cycles, and the like. The technology will initially be offered in 2.0 and 4.0 Ah, as of July 2015.

FASTER CHARGING

Early this year, Makita introduced a 5.0-Ah 18-volt pack (BL 1850). Less caught up in the amp-hour race than other tool companies, Makita is content to upgrade its packs after its competitors have already done so (Bosch, DeWalt, and Milwaukee introduced 5.0-Ah packs in 2014). To those who feel it's a problem not to be first, Makita would argue its standard charger is so fast (4.0 Ah in 40 minutes; 5.0 Ah in 45 minutes) that so long as power is available for charging, you are unlikely to run out of juice while using its batteries.

The company's answer to the growing desire for larger, more-powerful cordless tools was to double up on batteries—first via an adapter that let 36-volt tools be powered by two 18-volt packs, and later, via tools designed to accept two 18-volt packs at a time. Dubbed the X2 system, Makita's current line-up of dual-battery tools includes a 7 1/4-inch circular saw, a 1-inch rotary hammer, a chain saw, a blower, and a hedge trimmer.

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Crescent's 12-inch self-adjusting pipe wrench can be used like a ratcheting tool to quickly tighten or loosen rough-in plumbing and gas-line fittings from $5/8$ inch to $1\frac{1}{2}$ inches in diameter.

Self-Adjusting Pipe Wrench

Crescent recently announced a new 12-inch pipe wrench designed for one-handed use. Unlike conventional pipe wrenches, which require you to turn a wheel to adjust the jaws, the Self-Adjusting Pipe Wrench (CPW12) tightens against the pipe when you turn it one way and loosens when you turn it the other. It works with common

pipe from $\frac{5}{8}$ inch to $1\frac{1}{2}$ inches in diameter, including black-iron, galvanized, PVC, and copper. According to the manufacturer, this wrench can be used like a ratcheting tool to quickly tighten nuts, bolts, and couplings. However, given the way the teeth dig in, you would not want to do this with anything other than rough hardware.

Lighter and narrower than conventional pipe wrenches of similar capacity, the Crescent is easier to carry and will fit places other wrenches will not. The tool is made from stack-laminated steel with a corrosion-resistant black-oxide coating. The handle is encased in a comfortable dual-material plastic grip. Street price: \$20. —D.F.



Quick-Shift Impact Driver

Most trade contractors own a single impact driver and use it for everything from big lags to small screws. But the problem with using one tool for driving that range of fasteners is lack of control: Drive too fast or let your attention wander, and you'll damage the surface or destroy the screw you're driving. Makita's XDT09 is designed to drive with both power and control. Power comes from the brushless motor. The control comes from having three speed and impact ranges and a feature known as "Quick-Shift Mode." In Quick-Shift, an electronic controller detects the amount of torque being applied to the fastener and automatically downshifts from third to second speed just before driving it home. The Quick-Shift mode is engaged by pushing a button on the base of the handle. Features include an LED light, a three-stage battery gauge, and a very short head that fits in tight spaces. Price: \$370 (kit); \$170 (bare; XDT09Z). —D.F.