ALL I WANT FOR CHRISTMAS... ARE POWER TOOLS FOR THE WORKSHOP

By James de Havilland

Rechargeable battery power tools have developed to the point where a mains corded tool is often seen as old fashioned. But are all rechargeable battery powered workshop tools equal?

Take a stroll around a big DIY superstore and the power tool section will no doubt include a selection of carry cases stuffed with all sorts of battery powered screwdrivers, circular saws, sanders, jig saws etc. Some of these kits, branded with a name you probably have never heard off, will be priced extremely competitively; how about a starting price of under £50 for a three piece kit with a couple of batteries and a charger included?

For occasional DIY operation, these kits may well be fine. For professional use, well you get what you pay for. Really cheap power tools have limitations that will include slow to charge batteries, limited battery life, low power, high weight etc. Move up to known brands to include DeWalt, Makita, Hitachi, Ryobi and Bosch and prices climb significantly. As you would expect, so does performance, longevity and overall quality.

To compare the ultra cheap DIY items with well known power tool brands, however, is a bit naughty. A cheap and wobbly powered screwdriver that retails for a few pounds will struggle to match a quality item costing perhaps £70 to £130. The challenge is to compare own brand tools from leading suppliers such as Spaldings, with the better known OEM manufacturers.

First, consider some of the arguments put forward by premium tool makers Makita. The Japanese manufacturer has been in business for 100 years, and currently has seven ISO registered production plants around the World, including in Telford; this UK facility exports 80% of its production and Makita claims it is now Britain's leading professional power tool manufacturer. The company's range currently extends to some 600 items and includes petrol and electric chainsaws, brushcutters, hedge trimmers and mowers.

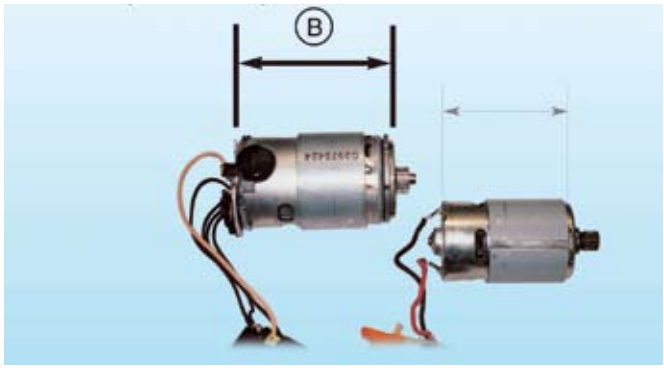
Getting back to power tools, Makita can rightly claim its rechargeable battery tools now offer higher torque levels, greater impact joules, lower weight, reduced vibration risks and extended operational life than those it offered a decade ago. Battery technology has also developed. Cordless tool batteries were originally nickel cadmium NiCad types, nickel metal hydride Ni-MH coming next to offer a reduced need to discharge fully before charging. First generation Ni-Cad batteries had a 'memory' effect that meant they needed to be fully discharged before re-charging.

Modern cordless tools are now starting to be powered by Lithium-Ion batteries. These ensure a modern tool can pack a powerful punch for longer periods. Take the Makita 18v BTW251as an example. Fitted with a ½" square socket drive, this 1.7kg power wrench generates 230Nm or 170 lb-ft of torque. Typical vehicle wheel nuts are tightened to 65Nm / 48lb-ft, a crankshaft pulley typically having its retaining nut tweaked up to and 140Nm / 105 lb-ft. So a tool like this has the twist action to suit some pretty tight fasteners. The tool also generates up to 3,000 blows per minute to help free-off tight nuts. Dependent upon model, Makita impact drivers, with a ¼ inch square drive, will be priced from around £200.

Quality brands include Hitachi, its 18 volt cordless impact drill/driver boasting a 3.0 amp hour Li-ion battery and the ability to bore through 16mm of brick, 38mm of wood and 13mm of steel. Supplied with a 43 piece drill and driver set, plus three batteries, it is price around £375.

Do a bit of shopping, and Makita prices can look a bit on the high side. But it is important to do a true like for like comparison, some less expensive alternatives not having the same battery stamina, torque ratings or features. Good battery performance counts for a lot and, with its latest Lithium-ion cells, Makita certainly seems to offer something that is above the ordinary. Also see the picture showing drill internals. Although the items pictured highlight the difference between a cheap drill that was designed to look like a Makita, the message is much the same. You get what you pay for.

Or do you? Spaldings, well known supplier of tools and other workshop goodies, champions its own Truecraft brand. Although the company sells a range of leading brand power tools, certain items, such as its Truecraft 19.2V Cordless Impact Wrench, certainly appear to offer a lot performance for the money. This particular model has a torque rating of a whopping 400Nm / 295 lb-ft and is supplied with a battery that is claimed to run for hours from a fast 1 hour charge. Price is around £230.



Makita is keen to promote the quality of its products. The illustration above highlights the differences between a cheap 'counterfeit' drill and a Makita tool. Pointer 'A' shows the plastic gearbox used in the cheaper drill; the Makita is all-metal. Points 'B' and 'C' illustrate the difference in the size of motors. The larger of the two is the Makita unit which, in tests, proved not only more powerful but considerably more durable too.

Spaldings suggest its own brand Truecraft offers a good balance between performance, quality and pricing. Its Truecraft 19.2V Cordless Impact Wrench features a 2.0 amp hour battery with sufficient capacity to cope with a lot of twist action between charges. Price around £230 for just the tool and a single Ni-MH battery.

This is a powerful bit of kit that is well respected by professional users. It helps summarise what is now offer on the cordless power tool market. As long as the really cheap stuff is avoided, a mid-price tool may be fine as long as it is backed by a good supplier. Otherwise, it can pay to stick with a well known quality brand. For those who remain to be convinced of the value of a modern cordless tool, try an impact wrench. The chances are you will end up buying one. They are truly versatile items of kit that make swapping over wheels, changing tines and general workshop 'nut twirling' an absolute breeze.

BATTERY POWER

Ni-Cad provided the first truly portable power tool driving force but had two serious limitations. A Ni-Cad cell needs to be completely flattened prior to being re-charged. If a partial charge is left in the cell before recharging, the cell will take on a 'memory' that will only charge it to a level up to the charge that was left. Charge a half charged battery, and its capacity would be reduced to around half its potential capacity thereafter. This perhaps over states the case, but there is no doubt the operational life of the battery was dependent upon good management. Disposal of Ni-Cad cells remains an environmental risk; these types should always be recycled correctly by a tool dealer.

Nickel metal hydride, Ni-MH removed this memory problem, allowing anytime charging. These types remain the most popular and for most users they will be fine. Lithium-ion chemistry is the next development stage. It builds upon the proven dependability of Ni-MH but packs the same amount of punch in a package offering a 40% reduction in weight. This has a number of advantages, including being able to put a higher amp hour and higher voltage battery into a pack that is of a similar size to a lower capacity Ni-MH alternative. Or, the same power can be generated from a lighter cell, boosting and manoeuvrability and enabling the design of a more ergonomic tool. Compared to a Ni-Cad battery, a top quality Lithium-ion cell should deliver up to four times the work cycles during its lifetime and will hold its charge for long inactive periods in storage. This is of critical importance if a tool will see extended periods between use.