Cordless drills

NEED TO KNOW

Think realistically about what kind of work your new drill will do. Cordless drills are more convenient, but you'll need a mains one for serious jobs.

LIGHT DRILLING

Tasks such as drilling into interior walls or doors are a cinch for cordless drills, and you'll be free of annoying flexes.

TOUGH TASKS

Cordless drills can't generate enough turning speed to drill into the hardest substances (granite, say) so you'll need a mains drill for this. A typical top speed for mains drills is more than twice as fast as most cordless drills.

Some cordless drills have a hammer setting – a striking action – to give extra welly for some hard substances such as concrete. However, progress will be slower than with a mains drill and the exertion will quickly drain the battery.

SCREWDRIVING

You're far better off with a cordless than a mains drill for screwdriving. They let you choose the level of turning power (torque), which is useful for screwdriving; few mains drills let you do this.

The other option – which we don't recommend – is a cordless screwdriver. This is handy for confined spaces but quite weedy; batteries run down quickly and it lacks the power to handle much more than flat-pack furniture.

GEARS

Most drills have two gears; the first gives less speed and more twisting force for screwdriving. The second gear gives higher speed to drill harder materials. This Ryobi has three gears, for its wider range of speeds.

CHUCK

The chuck is the section that holds the drill bit (the metal shaft that makes your hole). All the drills have keyless chucks, so gone are the days of cursing the eternally lost key when you want to change the bit. Most models can take bits with diameters of about 0.5mm to 10mm or 13mm.

HANDLE DESIGN

Drills with a T-shaped handle, like this Ryobi, centre their weight so they feel more balanced. It's worth visiting a DIY shop to compare the feel of models you're considering.

The Spear & Jackson (16) drill handle is too thick to hold comfortably if you have small hands.

All our Best Buys except the Hitachi (4) have a screw-in second handle, which is really useful. These handles help to balance the weight and give you better control of the drill.

BEST BUYS

It's easy to disguise a mediocre product by tarting it up with extras like pop-up lights or spirit levels. The Best Buy drills have none of this flim-flam and score highly because they concentrate instead on excellent drilling and screwdriving. None of them is cheap but they all aced our endurance tests, so we reckon they'll give you at least ten years' happy use.

The 18V **Ryobi (1)** is £180 from B&Q. It's a classy cordless drill with lots of good features. It has three gears and a top speed of 2,200rpm, which gives it extra oomph to tackle hard surfaces. It's also the best choice for hammer drilling in tough materials such as concrete.

It is quite a heavy beast so it's not ideal for overhead jobs – such as drilling for a ceiling light fitting – but the weight lends itself well to tough tasks. Some people prefer to use a heavy drill. If you find it a bit too much, using the screw-in second handle will help.

Despite its weight and power, the Ryobi has a delicate touch. Screwdriving is a doddle because its first two gears let you operate at low speed and you can choose from 23 turning power (torque) settings to get the right one. Its power means you'll notice some vibration during hammer drilling but it's not noisy and it's comfortable to use. The handle is soft and easy to grip, and the controls are well labelled and simple. Battery life is excellent, too.

It comes with a depth stop – a measuring gauge you can set to prevent drilling too deeply.

Our second Best Buy is another hefty one – a 24V model from power-tool supremo **Bosch (2)**. It's the king of the Bosch series – we've also tested the similar 18V (9 in the table) and

PHOTOGRAPHY NICK WRIGHT

TORQUE

For each gear, you can set the twisting force, or torque, for screwdriving. This prevents overtightening or screw damage. Use higher torque for larger screws – if you're unsure which you need, start low and then increase it.

The number of settings ranges from six to 31; this Makita has 16. You're unlikely to need 31, but it's helpful to have lots of choice.

RECHARGING

Nowadays, most drills recharge in about an hour or less. But some, such as the Clarke (13), can take up to five hours. Luckily, plenty of drills, such as this Hitachi, come with a second battery pack so one recharges while you use the other.

The battery will run out if you don't drill often. A mains drill is a better choice if you drill rarely because some batteries stop working if not used.

VOLTAGE

Generally, the higher the voltage, the faster you finish the job, and the longer the drill runs without overheating. But the drill needs to convert the power efficiently – a good 14.4V drill, such as the Hitachi (4), works far better than, say, McKeller's 24V model (12). Still, an 18V or higher drill is best for tougher drilling, which quickly drains a smaller battery.

14.4V (5) versions – and achieves top ratings in our lab tests. Like the Ryobi, it uses a combination of speed, a strong battery and hammer drilling to take on tough drilling tasks.

It has fewer torque settings than the Ryobi but it's still easy to control when screwdriving. Spare bits are provided in the package.

Again, a well-designed T-shaped handle helps centre the weight, and there's a screw-in handle to aid balance.

The one niggle we have with Bosch drills is that, unless you take advantage of special promotions, you get only one power pack (spare batteries cost around the same as the drill itself). Still, battery life is excellent and you'll get plenty of work done before you need to recharge. The one-battery version is £99 from B&Q but Focus is currently selling the two-battery pack for £150.

The turquoise 18V **Makita (3)** is another great drill: a comfortable, well-constructed machine that's equally suited to power-hungry hammer drilling and controlled screwdriving.

But it's far from cheap, at £335 from independents – the cheaper Best Buys are just as good. That said, the price includes a depth stop and a second battery. And Makita deserves Brownie points for supplying nickel metal-hydride (NiMh) batteries, which are less damaging to the environment than nickel cadmium (NiCd) ones.

A three-gear version – the 8444D, at £305 – will replace this model in spring but stocks of this version should still be available for a few months.

Finally, there's the **Hitachi (4)**, which, like the Makita, has an NiMh battery. It's the surprise Best Buy because it's racked up an excellent score with a battery of just 14.4V. Sadly, though, it isn't much lighter than the other, bigger Best Buys.

It doesn't have a hammer setting so it's not great for heavy drilling. But it's a whizz at drilling in metal and stone, and fantastic at screwdriving. It's £265, including a second battery, from independents.

Other options

There's a second Bosch (5), £100, which is slightly lighter than our Best Buys. It's good at drilling overall, which is why it gets good marks in the table, but isn't good enough on metal to be a Best Buy.

DON'T BUY

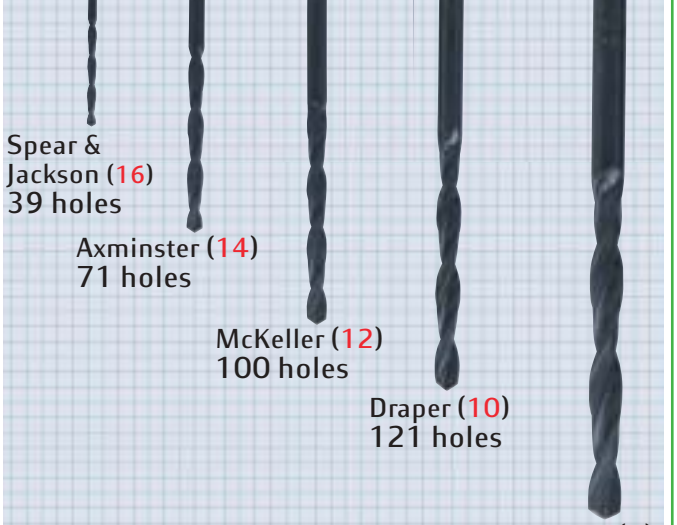
We found two models that will turn your DIY session into a chore. They're both cheap but, alas, you get what you pay for.

The **Spear & Jackson (16)**, £43, is the worst on test – its speed is too low and it lacks turning power. Battery life is poor, too; it drilled just 39 small holes before conking out. And, once it's done, it takes up to five hours to recharge (the average is an hour or so). Worse, it stopped working about a third of the way through our endurance tests so the chances are you'd be throwing it in the bin before too long in any case.

16 Spear & Jackson

The **Black & Decker (15)**, £55, isn't bad at screwdriving and drilling in wood but it struggles on other surfaces. If you want a drill that can do more than just assemble bookcases or fix door furnishings, you'll have to choose another.

15 Black & Decker



BATTERY LIFE

Doing DIY can be frustrating enough – you don't want your drill giving up before you do. The best batteries let you do four times as much work as the worst. The graph shows how many 6mm holes, 4cm deep, we drilled before each drill gave up.

KEY

★ ☆ ○ ◒ ● Best Worst

Best Buy

Don't Buy

SCORE

This ignores price and is based on:

Ease of use	25%
Endurance	20%
Battery life	7.5%
Features	5%
Instructions	5%
Models with hammer	
Hammer drilling	15%
Screwdriving	12.5%
Drilling	10%
Models without hammer	
Screwdriving	20%
Drilling	17.5%

TABLE NOTES

We tested 14.4V to 24V cordless drills from major brands.

Specification

Price Lowest on high street or, for prices in *italics*, online.

Performance

Hammer We test models with hammering function by drilling holes in concrete and measuring the time taken and efficiency. **Drill** Based on time taken to drill holes in stone, metal and wood. For models without a hammering function we used a pilot hole for the metal drilling test, to make sure the drill didn't slip. **Screwdriver** We drove screws in and out of wood and metal, measuring how long it took and how easily we could control speed and torque.

Use

Endurance Our endurance tests simulate ten years' DIY use. **Ease of use** A panel of experienced DIYers assessed each model for weight, balance, controls, changing drill bits and the battery. **Battery life** We test how many holes can be drilled and screws sunk on full and partially recharged batteries.

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		Specification			Performance			Use			Score
	BRAND	Price (£)	Voltage	Weight	Hammer	Drill	Screwdriver	Endurance	Ease of use	Battery life	(%)
1	Ryobi CDI-1803	180	18	3.1	★	★	★	★	☆	★	83
2	Bosch PSB 24 VE-2	99	24	2.8	☆	★	★	★	☆	★	77
3	Makita 8443 D	335	18	2.7	☆	☆	★	★	☆	★	77
4	Hitachi DS14DMR	265	14.4	2.5	n/a	☆	★	★	★	☆	74
5	Bosch PSB 14.4 VE-2	100	14.4	2.1	☆	☆	☆	★	☆	☆	69
6	Skil 2702	90	18	2.0	n/a	☆	☆	★	☆	◒	67
7	Metabo SBP 18 Plus	305	18	3.0	☆	★	★	★	●	★	67
8	Black & Decker HP 188FBT	*100*	18	2.3	◒	☆	★	☆	☆	☆	60
9	Bosch PSB 18 VE-2	120	18	2.3	◒	☆	★	☆	☆	☆	57
10	Draper Expert CHD 180 V2	140	18	2.6	◒	☆	★	★	○	☆	49
11	Black & Decker HP 148 FBT	*85*	14.4	2.0	◒	○	☆	☆	☆	☆	47
12	McKeller MCKT11	70	24	2.9	◒	○	☆	☆	●	○	47
13	Clarke CCD 180	27	18	1.9	n/a	○	○	★	○	◒	45
14	Axminster AW180CD	90	18	2.2	◒	○	○	★	◒	◒	44
15	Black & Decker CD18CE	*55*	18	1.9	n/a	◒	◒	◒	◒	◒	32
16	Spear & Jackson SJ-CD18KUK	43	18	1.6	n/a	◒	●	◒	◒	●	16