

Wire detectors

NEED TO KNOW

It's common sense to avoid drilling directly above or below electrical switches or sockets. But wiring and plumbing circuits aren't always where you expect, particularly in older houses.

So, in theory at least, one way to avoid getting a nasty shock is to invest in a wire detector. These are hand-held, battery-operated devices that you simply run over areas of wall or floor where you want to drill. If pipes, wires, live cables, or metal and wood studs are lurking beneath, the detector will beep or display lights or graphics to warn you.

WHAT IT DETECTS

Most modern detectors are multifunctional and can be used to find all these items. But check to see what's claimed and how the device will let you know what it's found. Usually, you can set the device to look specifically for one category – live wire, say – at a time. If your detector doesn't have separate settings, it should have explicit alerts to identify whether it's located a pipe, wire or wood. This is important: while you don't want to drill into cable, targeting wooden studs (joists) helps give more secure support if hanging shelves or cupboards.

In addition, the detector must be precise. We found that some detectors are so over-sensitive that they go off almost indiscriminately.

SHAPE AND SIZE

Wire detectors come in various shapes and sizes. Most are slab-like – similar to a remote control – which means they take up quite a wide surface area on the wall. Others, like this Rapitest and the Silverline (5), look like staple guns, with handles that make them comfortable to hold. Most have felt, rubber or Velcro pads on their undersides to prevent marking the wall.

BEST BUYS

The results of our tests were disappointing. Although most of the devices could find copper pipe under floorboards, only three could spot pipe behind plasterboard.

And results for wire detection were patchy. None of the detectors could satisfactorily spot wire or live current we'd hidden below relatively thin 10mm plasterboard. Although several manufacturers claim their models are capable of detection at this depth, our test results suggest you should be wary.

Results were better when wires were buried just below the surface of plaster but, even then, some models were quite bizarrely erratic. For example, some could locate our electrical cable when it was switched off but when it was live they missed it.

It's wise, therefore, to search using metal and live-current settings, and make sure you go over the area a few times. If you have any residual doubt, trust your instinct and drill elsewhere. It's crucial to read instructions carefully, too, and calibrate the detector first, then test that it's working by holding it over a pipe or cable.

More encouragingly, the detectors were generally good at finding joists to drill into. But we're still far from

impressed. Wire detectors aren't expensive (typically £10 to £30). But the financial consequences of trusting inaccurate readings could be high, as you summon electricians and plumbers to the rescue. Be aware of their limitations and pick carefully if you plan to use one.

The **Rapitest (1)** is by no means perfect. Like the others, it's not reliable for locating wire under plasterboard but, overall, it's our favourite. It can detect wooden joists, cables and pipes and, although it's not sold as a voltage detector, it worked well in our tests as it can rely on its metal detecting capabilities to tell you a wire is present. There are two settings: one for wood and one for pipes and cables.

The Rapitest was one of the most accurate detectors, consistently able to find wires and pipes and to pin down their location precisely. Its readings are unambiguous: it gives an audible beep and lights up when in range. It can then be recalibrated to narrow down the precise area.

It's easy to use, too. Its handle grip makes it comfortable to hold in position and it's fitted with Velcro tabs which protect your wall against damage. The Rapitest is simple to use and excellent value at just £16 online.

1 Rapitest

DON'T BUY

Don't be tempted to squander your money on either the Stanley (12) or the Black & Decker Laserplus (11). The Stanley is an expensive £60 due to its fancy LCD display, laser-line level and spirit-level extras, but it's bulky and annoying to use. Confusingly, its AC detection light displayed erratically and

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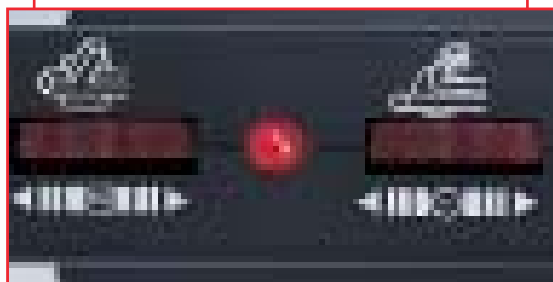
MODEL

- 1 Rapitest WPS115
 - 2 Draper 504D 4-in-1
 - 3 Brennenstuhl SMVD 4-in-1
 - 4 Draper DMVD1
 - 5 Silverline 324778 3-in-1
 - 6 Brennenstuhl AMV
 - 7 Draper 505D^a
 - 8 Ryobi SW-109TL^a
 - 9 West Meters 162 detector
 - 10 Maplin MD-98 Metal & voltage
 - 11 Black & Decker Laserplus LZR2^a
 - 12 Stanley Intelli Laser Pro
- ^a Battery included

**BEST
ON
TEST**

CONTROLS

It's important that your detector is easy to understand. This Rapitest keeps things simple by having separate, pictorial switches to instruct it to search for pipes and metal, or for wood. It then uses audio and light signals to alert you when it finds something. The Draper (2) and near-identical Brennenstuhl (3) are also quite straightforward, having switches for each setting. They have LCD displays using bars, similar to the battery-life indicators on some mobile phones, to show proximity to the wire or pipe, plus audible alerts.



you have to switch the laser off rather than on. It detects wooden joists well but is disappointing at other tasks so is best avoided.

The Black & Decker, £48, was also disappointing. Our testers found it very bulky, so taking readings in confined areas is difficult. Like the Stanley, its laser-line function

is awkward. The switch to activate it is positioned next to where the laser emits, so you need to take care to avoid looking at it as it could harm your eyes. There's a handy storage case but, somewhat painfully, we pricked a few fingers on the sharp pins provided for hanging the device on the wall.

SCORE

Ignores price and is based on:
Detection 75%
Convenience 25%

KEY

★ ☆ ○ ● ●
Best —————> Worst
■ Best Buy ■ Don't Buy

TABLE NOTES

We tested a range of wire, pipe and stud detectors available from DIY and online retailers.

Specification

Price Lowest widely available high-street or online price. **Stud, Current, Wire, Pipe** Claims to detect wooden studs/joists, live current, wire cables, pipes.

Other Has extra features:

A) distance detector, B) detects damp, C) detects microwave leakage, D) has laser-line level function (similar to a spirit level).

Detection – plasterboard

Wire, Stud, Pipe Accuracy, precision and consistency in detecting wires (with or without live current flowing), studs and pipes hidden behind 10mm plasterboard.

Detection – plaster/floor

Current, Wire Accuracy, precision and consistency detecting a wire, with and without live current flowing, buried in plaster.

Pipe Accuracy, precision and consistency locating a copper pipe under floorboards.

Convenience

Features Includes calibration indicator, separate indicators for metal and wire, and sensitivity adjustment. The more features, the higher the rating. **Using** Quality of instructions and how easy detector was to set up, understand and use.

Specification						Detection – plasterboard			Detection – plaster/floor			Convenience		Score
Price (£)	Stud	Current	Wire	Pipe	Other	Wire	Stud	Pipe	Current	Wire	Pipe	Features	Using	(%)
16	✓		✓	✓		●	★	○	☆	★	★	○	☆	68
48	✓	✓			A	●	★	○	○	☆	☆	○	○	58
39	✓	✓			A	●	★	☆	○	☆	☆	○	○	56
30		✓		✓	B	●	n/a	●	○	★	☆	☆	☆	52
10	✓	✓	✓	✓		●	★	●	○	○	★	☆	○	50
18		✓	✓	✓		●	n/a	●	●	★	★	○	★	48
15		✓	✓	✓	C	●	n/a	●	☆	★	☆	○	☆	44
30	✓	✓	✓	✓	A	●	○	○	○	○	☆	○	☆	44
20		✓		✓		●	○	●	○	★	●	○	○	41
10		✓				●	n/a	n/a	○	★	○	○	☆	41
48		✓		✓	D	●	n/a	○	○	○	☆	☆	○	35
60	✓	✓			D	●	★	n/a	○	○	n/a	○	○	31