



DID YOU KNOW? The Airblade is accredited by the British Skin Foundation and the Royal Institute of Public Health



This month in Technology

Meet the next generation of robots that are fighting wars and saving lives in our main technology feature on page 36. It's not all androids, we also take a look at hydroelectric power and find out about constructions like the Hoover Dam that can turn water power into electric power.



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Conventional warm-air hand dryers never seem to do a great job of actually drying your hands. That's because they simply blow out a low-power stream of warm air that slowly evaporates the water from your hands.

Indeed, inventor Sir James Dyson was so fed up with having to wipe his hands down his trousers after using a dryer, that he took a fresh look at the problem and came up with the Dyson Airblade - a dryer that works much faster, more efficiently and without spreading germs.

To use the Airblade, simply place your hands in it and draw them slowly up. 'Blades' of cool air travelling at 400mph and driven by a special digital motor scrape the water from your hands, leaving them dry. And the Airblade takes just ten seconds to dry your hands, whereas a conventional dryer will take up to 44 seconds.

What's more, because the air has been effectively filtered as it entered the Airblade, it's free of bacteria, which makes it more hygienic. In fact, the Airblade is said to be the world's only dryer that has been certified as hygienic by NSF International, the public health specialist. Other dryers simply suck in germ-filled air from the washroom, warm it up and blow it back out, germs and all.

Inside the Airblade

The Airblade combines high technology within a remarkably compact and stylish package

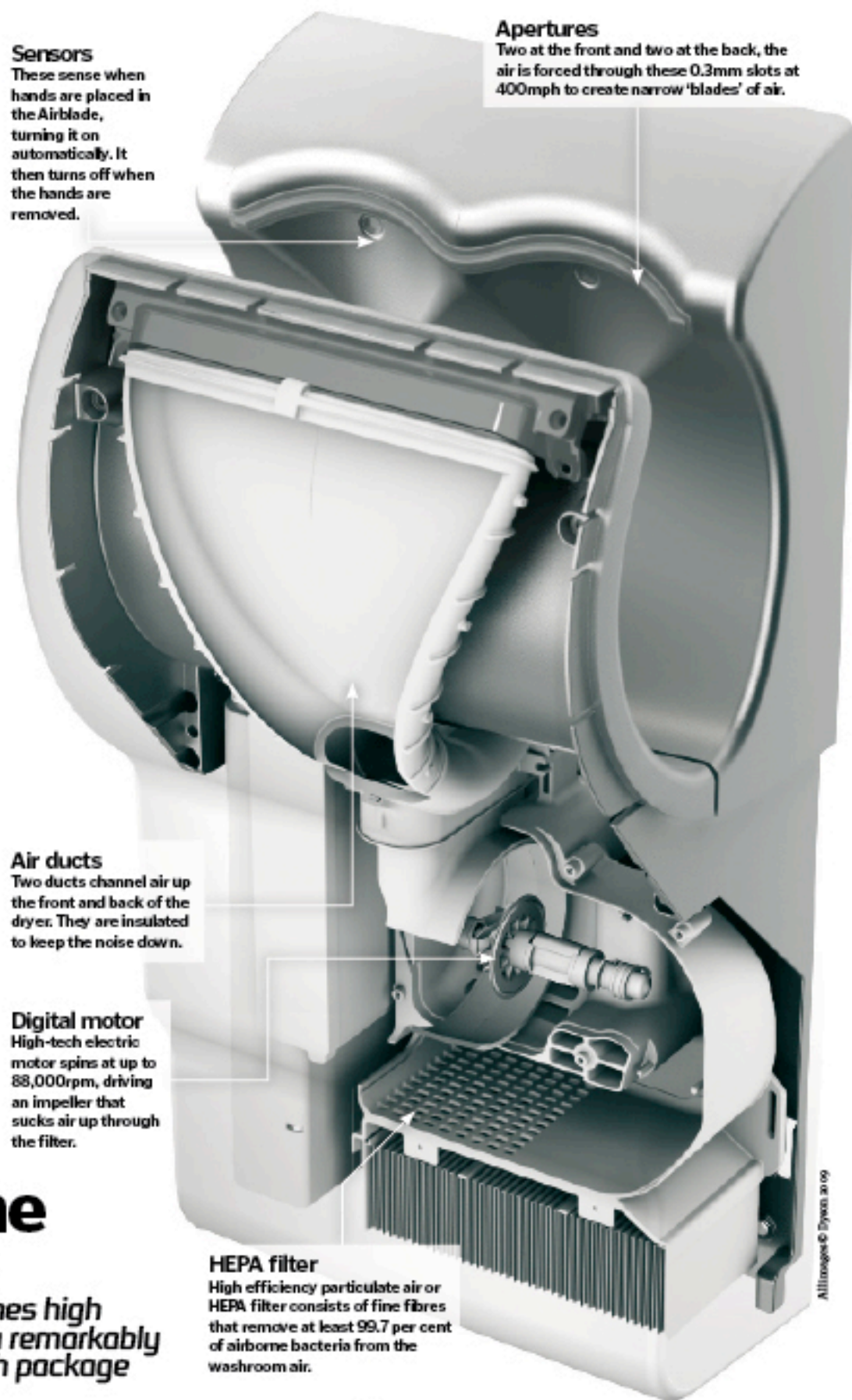
Sensors These sense when hands are placed in the Airblade, turning it on automatically. It then turns off when the hands are removed.

Apertures Two at the front and two at the back, the air is forced through these 0.3mm slots at 400mph to create narrow 'blades' of air.

Air ducts Two ducts channel air up the front and back of the dryer. They are insulated to keep the noise down.

Digital motor High-tech electric motor spins at up to 88,000rpm, driving an impeller that sucks air up through the filter.

HEPA filter High efficiency particulate air or HEPA filter consists of fine fibres that remove at least 99.7 per cent of airborne bacteria from the washroom air.



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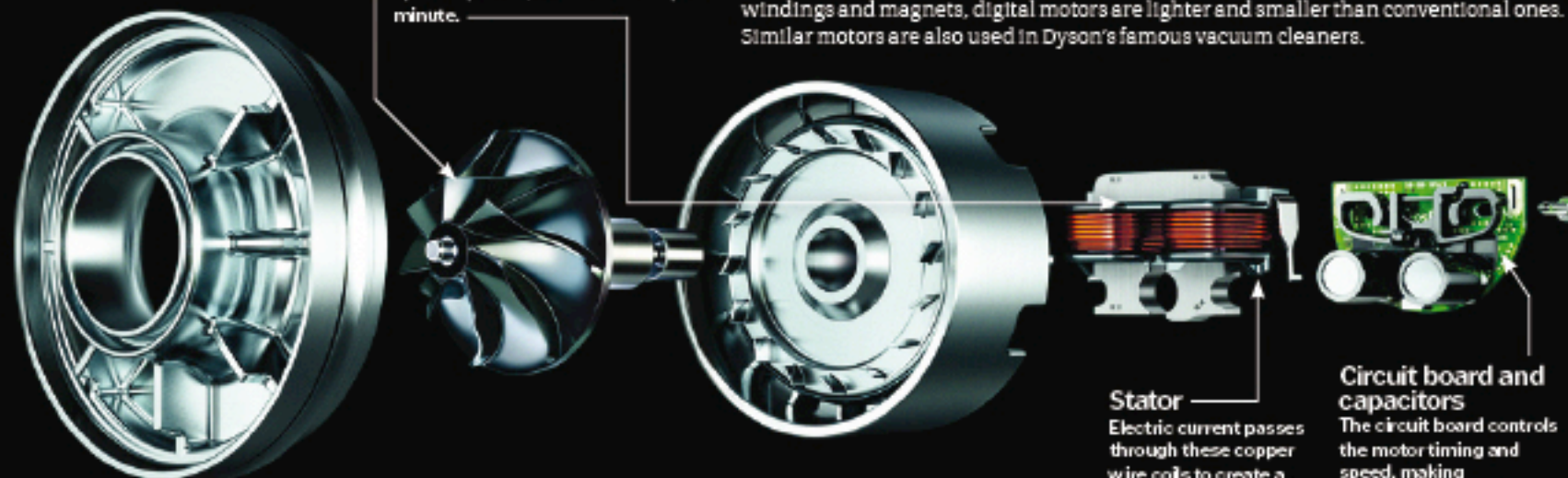
The Dyson digital motor

Impeller and vane diffuser The three-dimensional impeller is designed to suck air in and through the vane diffuser in an efficient manner.

Neodymium magnet Neodymium is a very strong magnetic material. The rapidly alternating electromagnetic field of the stator causes the magnet to spin at up to 88,000 revolutions per minute.

The secret of the Airblade lies in a special electric motor developed by Dyson's engineers. Conventional electric motors use brushes which create friction, wear out and produce carbon dust. They also have heavy, bulky magnets and windings.

The Dyson digital motor, on the other hand, dispenses with brushes and instead uses digital pulse technology to spin at high speed. Because they don't have such large windings and magnets, digital motors are lighter and smaller than conventional ones. Similar motors are also used in Dyson's famous vacuum cleaners.



Stator Electric current passes through these copper wire coils to create a magnetic field. The polarity of this field switches rapidly from north to south.

Circuit board and capacitors The circuit board controls the motor timing and speed, making adjustments up to 3,000 times a second. The capacitors supply current to the circuit board.

How it dries your hands

The blasts of air dry your hands as you place them into the dryer

Not only does the Airblade dry your hands, it's the only dryer that's been certified hygienic by NSF International



Impeller factor

The impeller's aerodynamic design means that its continuously curving blades spin at phenomenal speeds. The airflow produced is then channelled up and through the vane diffuser, as well as cooling other components of the system.

5 TOP FACTS THE AIRBLADE

- 1 High tolerance There is just 0.3mm clearance between the impeller and its housing.
2 Super strong magnet The neodymium magnet is ten times stronger than a typical everyday magnet.
3 Super sucker The Airblade sucks in 37 litres of air every second.
4 Efficiency dryer The Airblade uses up to 80 per cent less energy than a conventional dryer.
5 Cheaper than paper For the price of one paper towel, the Airblade dries up to 19 pairs of hands.

At last, a hand dryer that doesn't leave you wiping your hands down your trousers!

The Dyson Airblade