

SAVORTEX



Smart Drying™

EcoCurve





Entrant:
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About HJC

HJC Design is a product design & manufacture consultancy based in Sheffield, UK.

From initial concept through to manufacture, HJC Design create inspiring products and new brand identities that offer real value and bottom line benefit.

HJC operate a full design & manufacture service, resulting in a streamlined product development process that achieves business targets and assures commercial success.

A user centred design approach is combined with manufacturing proficiency to create solutions that are user driven and value engineered.

The award winning multidisciplinary team of designers are experts within consumer, industrial, automotive, food & beverage, medical and sports sectors.

Design for manufacture is placed at the heart of the design process, encompassing plastic injection moulding, vacuum forming, extrusion, over-moulding, blow moulding, sheet metal fabrication, die casting, compression moulding and production assembly.

Their latest designs have created substantial publicity in American, European and Asian design press, for more information please study their case studies and images at www.hjcdesign.co.uk

Project : Savortex

HJC Design was approached by SA Vortex, an award winning British Technology Company, to assist in developing an intelligent, environmentally friendly hand dryer that reduces energy consumption and provides real time monitoring capabilities to support efficient building management.

The Team

Client : Syed Ahmed (Director, Savortex)
Designers : Matthew Conley, David Pass
Manufacturers : John Calvert (Director, Plastic Engineering Solutions)
Electronics : Chris Ford (Director, Sabre Technology)

Project Outline & Justification

HJC's design brief was to effectively combine the unique SAVortex patented compression & heat recovery system with the latest eco efficient 550W digital brushless motor technology within an elegant and slim line package.

Although organic materials are used to manufacture most paper towels, the vast majority are sent to landfill, this alone creates 2% of total landfill in the USA. The use of hand dryers within corporate and commercial environments minimise this paper towel consumption, and reduce constant replenishing and maintenance costs. Unfortunately these dryers predominantly use power hungry motors and heating elements consuming between 1100W – 2300W of energy. These ungainly, noisy units have as a whole failed to evolve with new materials and technology, with poorly designed and maintained units actually harvesting bacteria and dust which can then be blown back onto clean wet hands.

Technology

The super-efficient 550W digital brushless motor used by the EcoCurve can dry hands within 11 seconds, equating to a cost saving of 99% compared to paper towels. Cold and recirculated air is drawn into the air channel adaptor and compressed to achieve a temperature of 39 degrees before being accelerated to 30 litres per second to deliver heat straight to the hands. Forward sensors self-calibrate on installation to accurately monitor and track hands for instant activation. The intelligent inbuilt energy monitoring systems wirelessly reports to a building management server providing crucial real time information to further minimise and manage energy allocation.

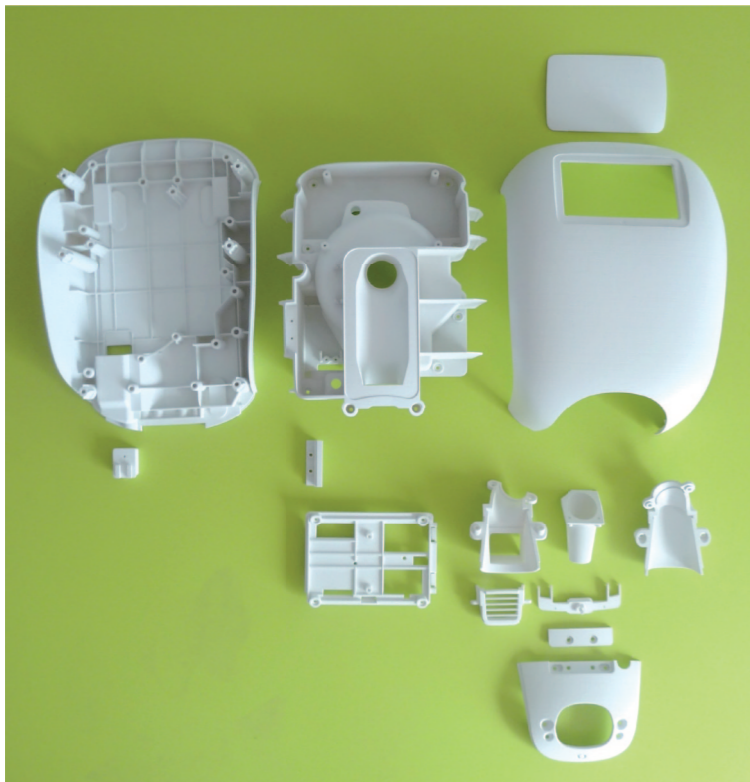




Responsible Design & Environmental Benefits

HJC applied a user centred approach throughout the development process. Early research and ergonomic testing proved current slim-line dryers with vertical jets caused frequent fingertip contact with the unhygienic mounting wall, potentially spreading bacteria.

Key to the design's success was the unit's slimness: HJC explored numerous internal configurations early in the design process to achieve the most space-efficient solution.



The enclosure needed to address noise reduction whilst boosting performance and permitting future upgrade options for data communication networks and OLED screen technologies. Testing multiple and single jet manifolds identified the optimum design configuration for the heat recycling chamber, maximising both air flow and compression, to generate warm air and reduce noise levels to 87dB. The resulting angled air manifold design directs the flow away from the wall and into the palm of the user's hand, preventing any unwanted contact and ensuring optimum comfort when drying.

In line with the SAVortex air recycling system HJC developed an inner chassis with integrated air channel to control the air through a direct route back into the blower. This inner chassis isolates the data communication hardware and media screen protecting crucial electronics from the influx of moisture constantly present within the recirculating air. All major mouldings are injection moulded from recycled ABS and PC/ABS blend incorporating antimicrobial additives to protect against bacteria. Injection moulding allowed complex parts to be developed to reduce components and weight. The use of threaded inserts has been minimised and restricted to key components to allow easy repair and disassembly for recycling.

Fitting is simple encompassing a robust recycled stainless steel wall bracket as a first fix to ensure a safe and rapid onsite installation. The intuitive drop and lock method guides the unit into position allowing the integral self-test and calibration system to engage and guarantee reduced setup times.

Low energy and intelligent drying technology is core to the SAVortex ethos. The EcoCurve design portrays these principal values through an organic, softly curved aesthetic to differentiate it from the geometric and brutal forms found in current dryers.

The final design has surpassed all expectations in terms of performance and aesthetics achieving success in numerous, prestigious Green Energy Awards, and exhibiting at London Ideal Home show.



EcoCurve

