Dyson

CASE STUDY

Test equipment for the 360 Eye vacuum cleaner

THE CUSTOMER

Dyson, the British technology company that designs and manufactures vacuum cleaners, hand dryers, bladeless fans and heaters, selling machines in over seventy countries

REQUIREMENTS

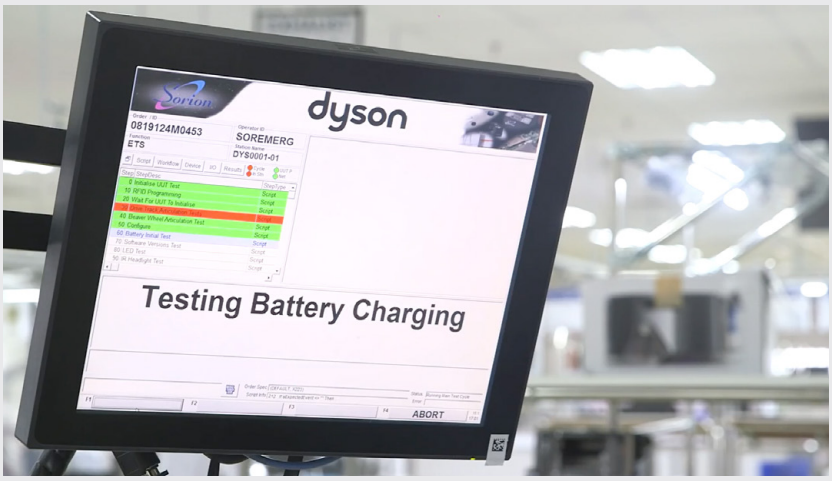
To design, build and supply test equipment capable of testing and calibrating the Dyson 360 Eye robotic vacuum cleaner

RESULTS

- Test equipment built to test thousands of units a day
- Equipment used during manufacturing and at Dyson service centres globally
- Bespoke quality assurance and performance reports produced

THE CHALLENGE

To design, build and supply test equipment for calibrating and testing the Dyson 360 Eye Robotic vacuum cleaner.
The robot constantly observes and interprets its surroundings with a unique 360 degree vision system and sensors using complex mathematics, theory, geometry and trigonometry to map and navigate a room.



Testing the Dyson 360 Eye

THE APPROACH

Working with Dyson engineers from an early stage, Sorion's experience and expertise meant we were able to ask the right questions to work out the best solutions to test and **calibrate the mechanical, optical and electrical features of the robot.**

360 Eye Portable Test System (fully self-contained)

THE SOLUTION

Utilising our 3D CAD expertise we provided designs of the proposed test fixture to ensure correct alignments between the robot sensors and the fixture's many calibration features.

Our in-house 3D printer was utilised to quickly produce development parts before taking the finalised component designs to machined parts. The final design incorporated as many Sorion off the shelf parts as possible to keep costs and lead times to a minimum and to achieve the best performance in terms of reliability, small space requirements and speed, giving the fastest cycle time possible.

The customer's requirements changed during the project, but we had the flexibility and the expertise to be able to quickly and efficiently adapt.

The equipment is designed to test thousands of units per day and be rugged enough to outlast the unit's estimated production lifecycle.

Sorion has supplied equipment used during manufacture at the end-of-line and portable test units for use at Dyson's service centres worldwide.

At the core of the test system is Sorion's **Sextans software**, which controls test and calibration process, data acquisition and result management.

The results of each test cycle are communicated back to our **Orion™ database** which, via a web browser, allows for **bespoke quality assurance and performance reports** to be produced.

For traceability purposes, the **Orion™ database is connected with Dyson's service software** and is able to transmit build information, such as serial numbers, along with the test results of each component of the 360 Eye.

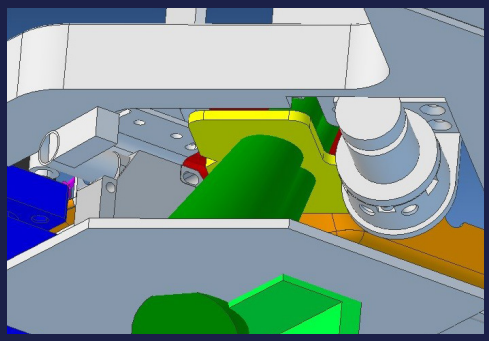
ABOUT SORION

Founded in 1990 and with equipment installed and operated by major OEMs and Tier 1 suppliers around the globe, Sorion Electronics has an established reputation for innovation, quality and reliability.

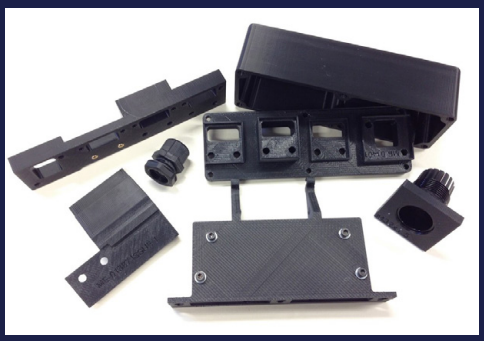
Your Partner for:

- Guided Assembly Process Control
- End of Line Test Systems
- Autonomous Mobile Robot Systems
- Ruggedised Electrical Connectors & Harnesses
- Quality and Traceability Reporting
- Electronic product design and development

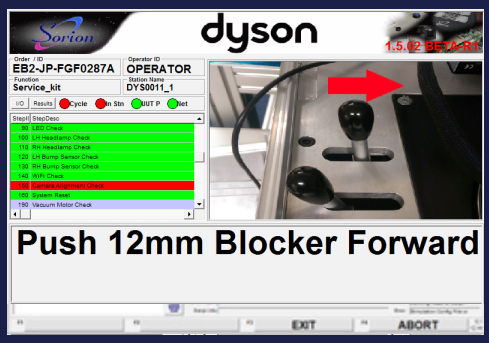
THE SORION SOLUTION



3D CAD Design



Selection of 3D Printed Parts



Sextans manages the test process

Orion™ Traceability and Reporting

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