

Imperial College's wind tunnel puts Reavell 5236 to the test

The aeronautics department at the Imperial College of London carries out a range of test projects, including the use of a supersonic wind tunnel to facilitate research on missiles and test spacecraft.



Supersonic wind tunnel

Benefits-at-a-glance

- Dry, oil-free air - eliminates the chance of contamination
- Automatic control – providing sufficient air to maintain each run
- High air capacity – with quick charge times and guaranteed free air delivery

Application-at-a-glance

- Powering supersonic wind tunnel
- Facilitates aeronautic research on various models
- On-demand air up to 28 bar
- Packaged, designed and serviced by Reavell

Application Details

The supersonic wind tunnel requires large volumes of high-pressure compressed air, up to 28bar, to perform correctly and, to help meet this requirement, ICL selected the H5236 compressor to replace the previous, 30-year old Reavell unit.

In addition, the tunnel requires dry and oil free air at all times, to ensure test integrity is maintained. The Reavell compressor was fitted with an oil adsorption filter that provides approximately 0.01pp residual oil carryover and a dryer that provides a dew point of -45°C.

Customer
Imperial College of London

Location
London, UK

Application
High-pressure compressed air used to power supersonic wind tunnel

Product
5236, H-Series water-cooled compressor

Customer Benefit
High reliability and large volume of air



Related Target Markets

- Automotive
- Aerospace
- Food & drink
- Glass and ceramics
- Healthcare
- Safety

Related Applications

- Component testing
- Gas recovery systems
- Research equipment

“ We’re very happy since the installation of this new compressor. The Reavell unit supplies us with the quantity of air we need and the quality, and it’s never let us down.”

Ian James, laboratory supervisor from Imperial College, London

Ian James, laboratory supervisor from ICL explains, “The kinds of materials that go in the tunnel section include aerofoils, cylinders, spheres and general aeronautic models and to perform each test, we require considerable amounts of air. One of the reasons the Reavell compressor was chosen was because of its charge time. It will recharge our air tanks quicker than most other compressors.”

High volumes of air

The H5236 is equipped with six large air receivers, with total volume of 90m³.

Reavell designed and built a control box, which allows the compressor to maintain a constant air supply in the department. It automatically comes online when the pressure drops to 350 psi, increasing pressure in the air receiver to 410 psi, so that there is always sufficient free air delivery.

Ian James concludes, “Our laboratory staff are not available to continually monitor the performance of the compressor during working hours and so we need the unit to operate without intervention.

Automatic switch on and off is essential to the daily running of the research facility, ensuring the compressor is always ready when required.

The Reavell compressor has proven its performance under constant demand, enabling our staff to concentrate on their core duties without having to consider the availability of air.”