

Imperial College's autoclave puts Reavell H5236 to the test

The aeronautics department at the Imperial College London (ICL) carries out a range of research projects, including the use of a high-pressure autoclave to cure components under different test conditions.



Benefits-at-a-glance

- Two separate air lines – maintains safety pressure
- Clean, dry air – protects integrity of test components
- High air capacity – with quick charge times and guaranteed free air delivery

Application-at-a-glance

- Curing composites and components in the autoclave
- Pneumatic sealing of autoclave door
- On-demand air up to 28 bar
- Packaged, designed and serviced by Reavell

Application Details

The autoclave requires consistent quality, high-pressure compressed air, up to 28 bar, to perform correctly.

To help meet this requirement, ICL selected the H5236 compressor to replace the previous, 30-year old Reavell unit - combining high reliability with cost-efficient operation.

Compressed air is used in the composites laboratory as the medium for curing components inside the autoclave. In addition, a separate compressed air line powers the pneumatic door seal, vital to maintain safety pressure on the doors and to ensure that no moisture or particulate matter interferes with the curing process.

Customer
Imperial College London

Location
London, UK

Application
High-pressure compressed air used to cure composites and seal autoclave door

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

“ 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. ”

Ian James, laboratory supervisor from Imperial College London

Air purity

The air supplied has to be dry and oil-free to protect the integrity of the composite cure in the autoclave. Reavell's H5236 was fitted with an oil absorption filter that provides approximately 0.01pp residual oil carryover and a dryer that provides a dew point of -45°C.

Oil and water contamination can also affect the integrity of the component parts within the test equipment itself. Clean, dry air protects the equipment from rusting; improving its longevity and reducing expensive repair costs.

High volumes of air

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

Reavell also 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, laboratory supervisor from Imperial College London explains, "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."