

## Delft University of Technology takes a Quantum Leap with Reavell

The physics department at the Delft University of Technology (DUT) in the Netherlands conducts a range of quantum mechanical experiments - and has purchased two Reavell H5417 compressors to help recover up to 95% of the helium used during its research projects. As well as significantly reducing raw material costs, the compressors' regulated-speed technology and monitoring software is providing a highly efficient solution that helps to lower the department's operating costs.



### Application Details

Liquid helium has become very expensive in recent years and with the university using up to 140,000 litres in order to cool its experiments, it is essential to reclaim as much of the gaseous helium released from the use of its liquid form as possible.

The two Reavell compressors, with custom built control and monitoring developed by Reavell distributor Geveke, are configured to compress the gas to 200-bar pressure, which is then stored in over 250 storage tanks.

#### Benefits-at-a-glance

- Energy efficiency due to regulated-speed technology
- Reduced operating costs - monitoring software allows greater control of consumption
- Clean, dry helium - protects integrity of experiments

#### Application-at-a-glance

- Recycling helium gas
- Pressurising helium to required high pressure
- Regulated-speed technology to ensure optimum compressor pressure at all times

**Customer**  
Delft University of  
Technology

**Location**  
Netherlands

**Application**  
Recycling and pressurising of  
Helium gas

**Product**  
Reavell - H5417

**Customer Benefit**  
Reduced energy and  
operating costs



### Related Target Markets

- Aerospace
- Automotive
- Chemical / Pharmaceuticals / Petrochemicals
- Component testing
- Diving

### Related Application

- Leak testing
- Wind tunnels
- Heliox breathing systems
- Cryogenic cooling
- Gas chromatograph

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### Application Details

The regulated-speed technology enables the DUT to fine tune compressor running hours, reducing its overall energy consumption. The volume in the low-pressure buffer balloons can alter according to the DUT's liquid helium usage, so the Reavell/Geveke package was built to include control software, allowing the university to tailor the compressors' usage to its exacting needs.

Oil and moisture separators in the H5417 compressor ensure clean, dry helium gas is produced.

Jelle Haanstra from the Delft University of Technology explains, “It is important that the helium gas is as clean as possible as oil and moisture can affect the integrity and the safety of our experiments. We are very pleased with the quality and the reliability of the high-pressure gas produced by the Reavell machines.”

By offering the Reavell compressors, Geveke was able to meet the exacting specification.

Jelle Haanstra continues, “Reavell and Geveke did a great job in incorporating the requested technical features and in turn helped us to minimise energy consumption.”