# Waitrose installs **HFO chillers** in South London store

Klima-Therm has published early and very encouraging results from a major trial of low-GWP, HFO refrigerants.

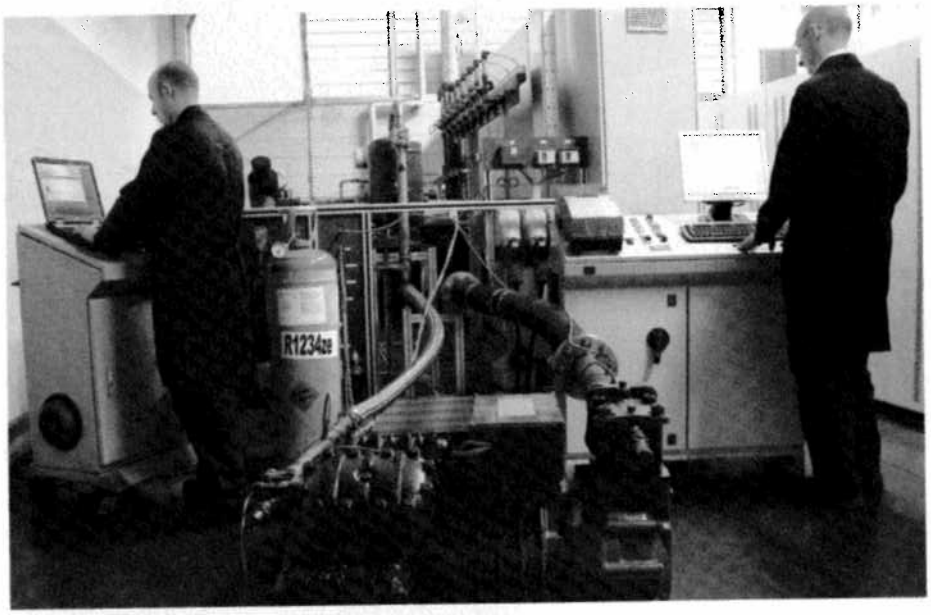
Continuing its leading role in the field of environmentally responsible refrigeration, Waitrose is carrying out an energy assessment in a working store of chillers running on fourth generation low global warming potential HFO refrigerants.

Believed to be the world's first supermarket installation of a packaged chiller using HFO refrigerant, the Italian-made Geoclima chillers are based on Frascold reciprocating compressors and operate on refrigerant HFO R1234ze from Honeywell.

They were comprehensively tested in the Geoclima factory before being supplied by Klima-Therm to the Waitrose store in Bromley, south-east London.

The two air-cooled HFO machines, each rated at 180kW, will provide chilled water as a condensing medium for the in-store integral cases running on propene.

Initial comparisons to a same-size store in Canterbury running identical systems but using R290 propane as the refrigerant show a 20% reduction in energy consumption for the HFO machines.



*Frascold lab tests R1234ze*

## Nationwide rollout planned

If the trial is successful as anticipated, Waitrose plans to adopt the ground-breaking HFO solution as part of its refrigeration platform for future stores, along with the continued use of hydrocarbons and tri-generation energy centres where appropriate.

Jim Burnett of Waitrose said: "We believe the HFO solution shows great promise, as it combines good efficiency with very low global warming potential. This is obviously a highly desirable profile in a refrigerant. If the ongoing monitoring of energy continues to prove successful, we plan to include HFO-based chillers in our choice of refrigeration platforms for stores in the future."

Tim Mitchell of Klima-Therm said: "The focus at the moment is on HFO R1234ze, as the refrigerant is already available at commercial levels. In the longer term, we are also interested in the potential of HFO R1234yf, which has an even lower GWP and potential other benefits. This is one for the future, but it is in our sights."

Giuseppe Galli, Managing Director of Frascold, said: "From a compressor engineering point of view, the properties and operating characteristics of HFOs are a very good match for traditional refrigerants, but obviously without the environmental penalty of high GWP HFCs. Our policy is to provide solutions for all of the mainstream refrigerant alternatives, which include hydrocarbons, $CO_2$ and now HFOs."

Tests carried out by Frascold with its eight-cylinder reciprocating compressors W40168Y running on HFO R1234ze indicate a loss of capacity of around 24 percent compared with R134a across various application conditions. However, mean power absorbed is almost 27 percent less, giving an overall Coefficient of Performance (COP) actually better than R134a across a range of applications and conditions.

Frascold's research and development team believe that performance with HFOs can be significantly improved with further optimisation. This could include refinements to the valve plate design, motor sizing and reducing pressure losses through the compressor.

## Calibre Services Group celebrates 20th anniversary

Klima-Therm is part of the UK air conditioning and building services specialist, Calibre Services Group, which is marking its 20th anniversary year with the opening of a new manufacturing facility and expanded offices in Wimbledon. The new facilities include an air conditioning design and project management suite, a modern ductwork fabrication shop, and a new training room equipped with state-of-the-art audio visual systems.

Roberto Mallozzi, Managing Director, said: "The development brings the group's operations under one roof for the first time. It brings important advantages in terms of collaborative working and efficiency, and will enable us to provide an even better service to customers.

He added: "Despite concerns over the general economy, I remain totally positive about our future in the air conditioning and building services sector. We are at the forefront of many key developments in the industry – the ultra-efficient Turbomiser chiller, data centre cooling, and bespoke chiller replacement to name a few – and we are ideally placed to meet demand from the market over the next few years."

The group began life in Purley, Surrey, with seven engineers as an air conditioning installation and service company. It soon moved to Tooting and then, later, to its current home in Wimbledon. Today, the group has a turnover of £21m and has developed several specialisms that provide a unique offering in the market.