



Sainsbury's switches to CO₂ fridges with Alfa Laval components

Green & Cool, Luleå, Sweden

Case Story



Supermarkets are increasingly recognizing the environmental and PR benefits of CO₂ as a refrigerant. One of the UK's largest supermarket chains, Sainsbury's, has pledged to switch to CO₂ fridges in all its stores by 2030. It is being supplied with new CO₂ chillers/freezers by Green & Cool, a Swedish company which sources key components from Alfa Laval.

'High quality, reasonable price'

Green & Cool places tough demands on its components, stipulating high performance, low sound levels and the presence of electronically controlled motors. "This is a high-quality product at a very reasonable price. We also appreciate the fact that Alfa Laval listened very carefully to our expectations when they designed the product," says Technical Director Micael Antonsson.

Within the world of refrigeration CO₂ has emerged as the environmentally conscious solution of the future. With about 165 CO₂ refrigeration installations to date, Green & Cool is

among the world's leaders in the field. Micael Antonsson: "In the UK, environmental organizations have been really pushing the big supermarket companies to act, and now they are. In Germany, there are subsidies to promote this kind of technology, while in Norway and Sweden there are taxes on refrigerants, so there is a real push towards CO₂ technology."

Major interest in CO₂ installations

"The supermarkets are convinced about CO₂, but the biggest challenge now is to convince the refrigeration companies, the installers around the world, that this technology is available, safe and proven," says Antonsson.

Among manufacturers of CO₂ refrigeration units, there are two schools – low pressure and high pressure. Green & Cool is in the latter camp. "The majority of our competitors are using standard refrigeration components for a lower pressure level, but together with Alfa Laval we have decided to develop high-pressure components," says Antonsson.



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Green & Cool's solution uses two Alfa Laval components: a high-pressure brazed heat exchanger and an air-cooled gas cooler. With a proven technical solution in place and a market that is quickly coming round to its benefits, Antonsson believes in a bright future for both CO₂ as a refrigerant and for Green & Cool. "It is just a matter of finding production capacity and the distribution network," he says. "Then there is no limit."

Only Alfa Laval supplies both types of heat exchanger

Göran Hammanson, Alfa Laval: "Alfa Laval is the only supplier that can supply both the air heat exchanger and the brazed heat exchanger for CO₂ at high pressure. CO₂ is now the highest priority for Alfa Laval. The next development is to take the gas cooler's coil geometry and apply it to evaporators for supermarket cold-rooms, with design pressure up to 80 bar and at a cost not much higher than conventional HFC evaporators."

Alfa Laval products installed

Alfa Laval AXP14 gas cooler

This high-pressure brazed heat exchanger is the ideal solution for transcritical all-CO₂ cooling systems. It is compact, low weight and easy to handle, and has a design pressure of 140 bar. The AXP14 can withstand the extreme pressures characterizing the hot side of such systems. The capacity is in the range of 20-50 kW as a gas cooler.



AlfaBlue air-cooled gas cooler

This range of heavy-duty air-cooled condensers for air conditioning and refrigeration applications features an innovative coil design providing excellent heat transfer at minimal refrigerant charge. AlfaBlue gas coolers have excellent sound characteristics and are energy efficient. They are available with EC fan motors for superior speed control and low energy consumption, and in several fan diameters.



Fast facts:

Customer: Green & Cool

- Headquarters: Luleå, Sweden
- Products: Air conditioning units, chiller units, freezer units, combined chiller/freezer units
- Customers: Supermarkets, food industry, medical industry
- Market presence: Norway, Denmark, Netherlands, UK, Spain, Finland, Switzerland, France

End-customer: J Sainsbury plc

- Founded in the UK in 1869
- 934 stores comprising 557 supermarkets and 377 convenience stores

Challenge:

- To supply key components for supermarket chillers/freezers using CO₂ as the refrigerant

Solution:

- Alfa Laval AXP14 gas cooler
- AlfaBlue air-cooled gas cooler

How to contact Alfa Laval

Up-to-date Alfa Laval contact details for all countries are always available on our website at www.alfalaval.com