

STAR'S NATURAL SOLUTION TO ENERGY EFFICIENT PLANTS

Star Refrigeration has installed two energy efficient plants to provide cooling for the cold and chill stores at Brakes' new distribution centre in Kent.



Brakes Distribution Centre

Brakes is one of the UK's leading food distribution businesses. In 2004 the company invested in a state-of-the-art distribution centre to supply foodservice outlets across the South East of England. Located in Aylesford, the purpose built centre features storage and handling facilities for catering supplies including frozen, chilled, ambient and non-food products.

As Brakes nominated refrigeration contractor on the project, Star designed and installed two systems for the distribution centre's cold store and chill store. It was vital that both plants offered natural refrigerant solutions with safe, reliable and energy efficient operation.

Star designed a direct ammonia refrigeration plant for the cold store and central ammonia plant with a secondary glycol system for the chill store. As a natural refrigerant, ammonia is environmentally friendly and energy efficient. It is widely recognised as a refrigerant that is highly suited to cold store environments.

Star Refrigeration's Sales Director Rob Lamb says: "The Brakes distribution centre at Aylesford is a flagship project for Star. It is the latest in a long line of cold and chill stores completed for Brakes over many years of partnership between the two companies. Our engineers have a unique insight into the current Brakes operation and are able to meet the company's demand for high quality, reliable and energy efficient refrigeration systems."

Brakes Group Operations Director, Clive Jackson says: "Star Refrigeration's proven ability to deliver safe, reliable and energy efficient refrigeration systems made them the obvious choice to realise our vision for the new Aylesford distribution centre. The quality of our product is paramount to Brakes ability to deliver complete solutions to our customers, and the state-of-the-art refrigeration systems installed by Star Refrigeration demonstrate our continued commitment in maintaining the integrity of those products."

Cooling for the frozen food cold store is provided by a direct ammonia refrigeration plant. The refrigeration capacity of the plant is 218kW. The

plant is designed to maintain air within the 1,974sq/m cold store at a constant operating temperature of minus 22C. The cold store is capable of handling 200 pallets of frozen food produce per day.

The cold store refrigeration plant features a duplex LPR (Low Pressure Receiver) compressor pack, coupled to an air cooled condenser and four air coolers. The plant operates on a critically low refrigerant charge. This is designed to minimise the volume of ammonia on site and reduce the risk in the event of a leak. The plant also features a reverse cycle defrost system to provide a rapid defrost with minimal fluctuation in air temperature.



The Freezer and Chill Store Refrigeration Packages

The large chill store at the Brakes distribution centre has a total floorspace of 3,512sq/m and features 40 vehicle loading docks. Star's refrigeration plant is designed to maintain air within the chill marshalling areas at a constant

temperature of +4.5C and also maintain +2C in a dedicated meat handing area. Reduced air draughts and minimal noise levels were key considerations for Brakes personnel working within the chill store.

The chill store refrigeration plant comprises a central ammonia system with duplex LPR compressor. This is coupled to a plate heat exchanger with a secondary pumped glycol system. The plant features an air cooled condenser and 18 low speed air coolers. The coolers within the chill store are positioned to ensure maximum air coverage, reduced air draughts and minimal noise levels.

Both refrigeration plants have a computerised control system to optimise efficiency. The control system has a 24-hour monitoring and dial out facility linked to Star's local service office. This allows remote monitoring, emergency dial out and off-site interrogation by Star engineers.

Star Refrigeration is the UK's largest independent industrial refrigeration engineering company. Star focuses on the design, manufacture, installation, commissioning and maintenance of industrial refrigeration systems. The company offers a turnkey package to all users of refrigeration plant.

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