STAR REFRIGERATION

CASE STUDY

FUJIFILM, GRANGEMOUTH

STAR COMPLETES COLOURFUL COOLING PROJECT FOR FUJIFILM

Customer:	**FUJIFILM Imaging Colorants**
Location:	**Grangemouth, Scotland**
Equipment:	**3 x screw compressors LPR heat exchangers Horizontal surge drum 2 x fixed speed glycol pumps**
Refrigerant:	**Ammonia**
Capacity	**430kW**
Temperature	**- 20°C ethylene glycol**

Star Refrigeration has supplied an energy efficient process cooling plant for FUJIFILM Imaging Colorants, a world leader in the development and manufacture of ink jet colorants.

FUJIFILM Imaging Colorants (FFIC) develops and supplies high performance colorants for the global digital printing market. The FFIC site at Grangemouth, Scotland, manufactures colorants for ink jet and toner cartridges used in printers and copiers throughout the world.

In a contract valued at over a quarter of a million pounds, Star designed and installed an environmentally conscious process cooling plant for colorant manufacture at the Grangemouth site. The low temperature ammonia water-cooled chiller provides energy efficient operation at varying process heat loads.

Star's refrigeration plant supplies rapid cooling to reactor jackets on a number of new process reactors. This plays a key role in providing accurate and responsive temperature control of key processing steps – helping to ensure the materials produced satisfy exacting quality standards.

Operating on natural ammonia refrigerant, the highly efficient plant cools 156m3/hr of ethylene glycol/water solution from -17˚C to -20˚C. It is designed to meet a peak process reactor heat load of 430kW for less than one hour, a sustained operating load of 350kW and a normal operating duty of 20-160kW.

Star's low temperature ammonia water cooled chiller

Three screw compressors enable the chiller to provide excellent energy efficiency at part load.

The plant also features low refrigerant charge plate heat exchangers, a horizontal surge drum and two

fixed speed primary glycol pumps.

Further energy savings are provided by variable speed drive motors on two secondary glycol pumps. This enables flow to be varied according to cooling demand. Star's patented TELSTAR computerised control system ensures optimum performance and efficiency. This includes floating suction and discharge pressure control and optimised compressor sequencing.

The plant is located externally, adjacent to the main manufacturing building. The compressors are housed in a low noise acoustic enclosure. This features access doors, ammonia gas detection system and extract ventilation fans.

Commenting on the project, Zac Meadows, Chemical Engineering Group Leader for FULIFILM says "Star worked closely with us to design an economically competitive solution which satisfied our demanding production requirements and environmental needs. We look forward to the plant continuing to deliver reliable and efficient cooling across the range of colorant production processes to be operated in this flagship new facility.

Star is the UK's largest independent industrial refrigeration engineering company. Star focuses on the design, manufacture, installation, commissioning and maintenance of industrial refrigeration systems.

For more information, visit Star's new website at www.star-ref.co.uk, email sales@star-ref.co.uk or phone Star on 0141 638 7916.

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