

Kirby manufactured site specific equipment



Early 2014, Heatcraft was approached by Victorian consultants Pitt and Sherry to customise a compressorised rack solution to refrigerate a 3500m² coolroom being used for the packing and storing of dairy products.

The coolroom facility is automated with high estimated loads, due to the heat being generated by the packing robots.

Account Manager Murray Hardy and Field Engineer Stephen Spiers worked closely with the consultant and contractor Specific Refrigeration to ensure the engineered solution met the specified requirements and the equipment was delivered on time.

Some redundancy was required in the event of a break down, with surplus capacity designed into the system to

cover this. The additional capacity through the redundancy requirement meant that variable capacity control was required.

The multiple stages of capacity were also required to meet the varying load from just storage to full packing operation when the load is at its highest.

To ensure stable temperatures in the refrigerated space, the defrost time of the evaporators needed to be kept to minimum.

To do this Heatcraft worked with the consultant to use Kirby low temperature evaporators to suit the requirement for electric defrost.

Heatcraft also reconfigured the distributor to suit the R134a medium temperature application, which simplified installation.

At a glance...

The Business Need:

A customised, robust and reliable refrigeration solution

The Solution:

- 2 x 4 Compressor Copeland Stream Racks complete with Switchboards and Dixell Rack Controllers
- Condensing via water cooled condenser
- Each rack connected to 9 x Kirby Heavy Duty Evaporators

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The solution arrived at was 2 x 4 Kirby Compressor Copeland Stream Racks, fully wired and supplied with Dixell rack controllers. Heatcraft also supplied the copper pipe, required installation products and Gas2Go® refrigerant to complete the project.

Each customised rack was fitted with a water cooled condenser supplied by the customer.

Stephen Spiers recalls, "The only real concern during the project was the oil control/return due to the distance from the plant to the coolroom. The nearest evaporator was approximately 50mtr away and the furthest at least another 70mtr away. With some careful monitoring by Specific Refrigeration and additional oil added to the system this has not proven to be an issue".

Studies in success



Due to the size of the refrigerated space the initial pull down to temperature did take some time but was expected due to the heat in the walls and concrete. With the heat removed, the room now maintains stable temperatures, with many of the compressors on each rack often cycled off onto standby.

As a result of the close consultation between Heatcraft and Specific Refrigeration, the customised solution simplified installation and the customer was delivered a robust and reliable refrigeration system.

- The compressor racks were delivered with Heatcraft fabricated brackets to take the contractor supplied water cooled condenser.

- On-site installation time was reduced as a result of the racks arriving on site fully wired with the rack controller pre-configured. This also assisted in the initial commissioning, allowing the racks to be started with minimal control programming required.

- Pre-fitting the correct orifice plate to the evaporators during manufacture removed the need to carry out the time consuming job on site.

- The multiple compressors provided the redundancy the customer was looking for. In the event of a compressor failure the remaining compressors are capable of maintaining the required temperature.

- Copeland Stream compressors are warranted for a period of 24 months

from date of installation. Heatcraft stock Copeland Stream compressors nationwide in all Regional Distribution Centres ensuring a speedy resolution of any site failures.

- The consultant has also indicated that at times the condensing water temperature may be considerably lower than originally allowed for. The resulting increase in compressor capacity allows for a reduction in run time of the compressors to achieve the required loads and therefore a reduction in running costs.

Alan Patterson, Managing Director of Specific Refrigeration concluded;

“We were pleasantly surprised with the whole experience, from the delivery timetable, to the quality of the build, the user friendly controls and the efficiencies of the plant in operation. Congratulations to all involved.”

To find out how Heatcraft can customise a compressorised rack solution for your next project, contact your Heatcraft Account Manager on 13 23 50.

To contact Specific Refrigeration Services Pty Ltd, phone 03 9363 1480.



13 23 50

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