

KEEPING THE FACTORY HUMMING

AN INDUSTRIAL
FACILITY CASE STUDY

The system was delivered to site as a complete package.

Operating efficiency ranges between 0.49 kw/ton and 0.72 kw/ton, depending on the system load. Annual average is 0.65 kw/ton.

“This was the perfect solution from a cost standpoint and it allowed us to complete the project with zero disruption to production.”

CKNA Manager

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Calsonic Kansei North America, Lewisburg, TN

Designed, assembled and tested in a controlled ISO 14000 factory environment, the Armstrong Chilled-Water Integrated Plant Package combines all the equipment needed to deliver chilled water in large buildings while maintaining superior energy efficiency.

Background

Calsonic Kansei North America (CKNA) is a global Tier 1 automotive parts supplier with 70 locations in 13 countries. Armstrong was asked to help with a project at the facility in Lewisburg, Tennessee which employs over 1000 workers in the manufacturing area. Multiple injection molding machines in the plant generate significant levels of heat. During the summer months, temperatures on the manufacturing floor were elevated, which contributed to increased maintenance and decreased employee productivity and retention.

Beyond the issue of ambient air temperature, the project presented a number of challenges that would affect the solution design. Maintenance and Production managers had determined that the cooling system would be needed by May, before the onset of the hot summer weather. That provided only a seven month window for design, fabrication, installation and commissioning. Additionally, because CKNA operates as a Tier 1 supplier to the automotive industry, they could not allow any interruptions to the production process. Floor space in the facility is maximized for production, so there was no available space to add equipment. The new system had to be provided as a prefabricated remote chilled water plant complete with an enclosure. Lastly, the electrical power available was limited by the size of an existing transformer. The installed solution would have to be energy efficient, and at the same time be capable of delivering 2000 tons of cooling.

Ultimately the many challenges of the project were addressed through a phased implementation, 1000 tons of cooling targeting the hottest plant

areas immediately, and then an additional 1000 tons, to address the remainder of the plant to be delivered at a later date.

The project was a great success. The completed system was delivered to site on time, with no cost overruns. The setting of the chiller plant and cooling tower was completed in less than three days and complete system installation was completed in less than four weeks. Air temperatures in the plant dropped and remained at a much more comfortable level. There were no disruptions to plant operations, and the installed system is guaranteed to work within the stated restrictions for power usage. Lastly, the choice of a high-efficiency system means that operating costs are kept to a minimum.

By the end of August, managers were able to identify a number of direct and indirect benefits of the project, including increased employee productivity, improved staff retention and improvements in manufacturing quality indicators.

Tech-facts

Armstrong product solutions built into the packaged system include:

- IPC-11550
- Chilled Water Pumps
- Condenser Water Pumps
- Suction Guides
- Flo-Trex Valves
- Vortex Air Separator
- Expansion Tank
- Design Envelope 4300 Vertical In-Line Pumps