

Convenience store improves energy efficiency with walk-in refrigeration solution

Result

- The Copeland Scroll™ Outdoor Refrigeration Unit X-Line Series contributed to 29% store energy savings when compared to legacy technology units
- The three Copeland Scroll X-Line units are expected to save about \$2,500 in energy cost per year
- Operating sound output will be 11-16 dBA quieter than traditional outdoor units, especially important to the residential neighborhood
- Built-in CoreSense™ Diagnostics gives technicians information to quickly and accurately troubleshoot any issues, avoid unneeded service calls, and protect the system from premature failure



Application

Refrigeration systems for walk-in cooler and freezer, as well as display cases.

Customer

Kelley's Markets are owned by the Kelley Williamson Company of Rockford, IL. Founded in 1926 by entrepreneurs Walter Williamson and Nate Kelley, they are an ExxonMobil distributor, operating fuel stations and convenience stores for more than 90 years. Still family owned with nearly 50, crisp and clean Kelley's Market stores in operation, they pride themselves on offering top quality products underscored with outstanding service.

Challenge

Growing convenience store chains such as Kelley's Markets are especially focused on operational issues. Kelley's Markets works closely with their refrigeration contractor to make wise choices regarding their equipment and identify opportunities for improvements in energy efficiency, maintenance and product protection.





When it came time to select refrigeration equipment for the design and construction of a new store in Rockford, IL, Kelley's Markets desired a refrigeration solution with built-in diagnostics that was quiet, good looking and would save energy.

Solution

Although this was a first-time installation of X-Line units by this contractor, start-up and commissioning went smoothly and there were no issues. The energy efficiency of the entire system was improved beyond initial expectations. The Copeland Scroll Outdoor Refrigeration Unit X-Line Series accounted for approximately 29% energy savings when compared to traditional units. One X-Line unit powers the walk-in freezer, one for the walk-in cooler, and one unit for a merchandising display case.

Copeland Scroll compressors offer the highest energy efficiency levels to lower end user energy bills. With integrated controls, to optimize fan motor speed and maximize the heat transfer larger condenser coils, additional energy savings are achieved. Advanced protection and early warning against common failure conditions helps lower maintenance costs.

To avoid unneeded service, protection against common nuisance conditions is provided, including exclusive liquid flood-back prediction and 'fresh start' logic to further protect the compressor. With the fault code retrieval capabilities of CoreSense Diagnostics, accuracy in the diagnosis of field issues is greatly enhanced, facilitating the service process to further reduce repair expenses. Smooth scroll movement lowers sound and vibration levels.



Ultra-quiet variable speed fan motors and internal baffling further improve the sound quality, creating a better customer experience and providing additional location options.

Advanced walk-in refrigeration technology

The Copeland Scroll Outdoor Refrigeration Unit ranges in size from 1.5-6 HP, and offers energy savings of up to 40% compared to standard industry condensing units, making it perfectly suited for many walk-in cooler and freezer applications. The X-Line unit incorporates multiple advances in refrigeration as standard features into a single unit solution, including:

- The latest generation Copeland Scroll refrigeration compressors which have been optimized for the highest annual energy efficiency
- Ultra-quiet and efficient variable-speed PSC fan motors
- Large condenser coils for more efficient heat transfer
- High efficiency fan blade design
- Proprietary electronic algorithms to optimize energy performance
- Exclusive Enhanced Vapor Injection (EVI) circuit on low temperature units for added capacity and system efficiency
- Exclusive CoreSense™ Diagnostics to enable faster, more accurate service, along with compressor protection benefits to lower total lifecycle costs

The X-Line unit's slim profile, light weight, wall mount capability, and sound reduction features may also offer customers added benefits from:

- Crane rental savings
- Flexible location options previously not available
- Ease of installation and service savings
- Compliance with noise ordinances
- A more attractive and quieter atmosphere for neighbors and customers