

## Golden State Foods Manufacturing Plant



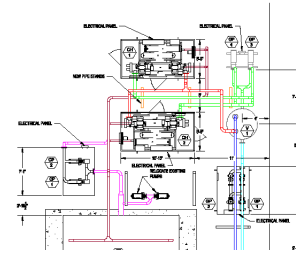
## C&L Refrigeration Designs & Installs Industrial Process Chiller System for Golden State Foods Plant

Golden State Foods, located in the City of Industry, CA was founded in 1947 and since 1967 has been a primary supplier for McDonalds. For the last 15 years Golden State Foods has partnered with and utilized C&L Refrigeration to provide refrigeration and air conditioning solutions to their City of Industry manufacturing plant.

When Golden State Foods was recently in need of upgrading their process chiller and expanding their Liquid Products production they looked to C&L for solutions. The process chiller, used for a variety of condiments, syrups, toppings, dressings and sauces (such as Big Mac sauce), is an extremely critical part of the factory's operation. 100% Reliability and very close temperature control are of the utmost importance to Golden State Foods and are an essential component required in meeting their high standard of product quality. C&L took the challenge and utilized its engineering, construction, and service departments to provide GSF with an industrial process chiller system to meet this strict criterion.

The new chiller system was designed with four 40HP compressors that produce a total of 120 tons of refrigeration. Because of the importance of reliability and redundancy, each compressor operates on individual refrigerant circuits and controls and can be isolated for maintenance while the other circuits are running.

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### QUICK FACTS

- Use of non ozone depleting R-507 refrigerant
- Custom fabricated glycol tank with special baffling to direct warm glycol to the chiller units and cold glycol to the plant.
- 3-way pneumatically controlled mixing valve installed to ensure exact glycol temperatures to the production floor
- 100% Redundancy on chiller and all pumps to keep the critical processing lines operational
- The new industrial process chiller is a critical component utilized in the production of condiments, syrups, toppings, sauces, and dressings



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Due to the varying loads throughout the day on the production floor, the new system is equipped with unloading capabilities on each compressor which allow the system to meet every possible load condition and operate more efficiently.

The end result is a reliable and efficient industrial process chiller system which will provide years of reliable service, and due to the designed in extra capacity will be able to grow over the years with Golden State Foods.

## Challenges and Solutions

**Challenge:** Design and build a system which will guarantee constant glycol temperatures in the plant at all times.

**Solution:** Two complete process chillers, each with two separate circuits, were installed to provide GSF with 100% redundancy. This design will allow scheduled maintenance to be performed while eliminating chiller down time.

**Challenge:** Provide exact glycol temperature control to plant.

**Solution:** C&L Refrigeration installed a three-way glycol mixing valve which ensures an exact glycol temperature is maintained at all times.

**Challenge:** Design an environmentally friendly system.

**Solution:** C&L Refrigeration designed and installed a system which operates on non ozone depleting R-507 refrigerant rather than the more common halocarbon refrigerant R-22. Each chiller has a refrigerant leak detector system installed to monitor the area for any refrigerant leaks. Additionally, both systems operate with water cooled condensers which allow the compressors to operate at lower temperatures and use less energy than with standard air cooled condensers.



FOR MORE INFORMATION ON THIS PROJECT OR HOW C&L REFRIGERATION  
CAN ASSIST YOU WITH YOUR OWN PROJECT, PLEASE CALL

**800-901-HVAC(4822)**

### About C&L Refrigeration

C&L Refrigeration has provided high-quality maintenance, engineering and construction service in the commercial and industrial air conditioning and refrigeration industry since 1978. In addition, C&L assists clients with air Conditioning needs and in meeting EPA, AQMD and OSHA compliance standards. A family-owned business, C&L strives to encourage its 175 employees to take pride in their performance, understand each customer's needs and customize projects to meet those needs. With headquarters in Brea, CA and a branch office in Las Vegas, NV, C&L Refrigeration is strategically located to responsively serve all of California and Southern Nevada.



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