

PROCESS COOLING SYSTEMS



Worldwide Experience

- Argentina
- China
- United States
- The Carribbean
- Poland
- Canada
- Colombia
- Mexico
- Russia



A Unique Process Cooling Resource.

Certainly, a number of chiller manufacturers exist. Companies where their system experience is largely a result of applications for their manufactured products, the system range being restricted by a reliance on standardized commercial equipment. It is not surprising that many such implementations are less than optimal, perhaps not really taking greatest advantage of large system fluid dynamics and infrastructure, servicability and more comprehensive control systems.

Freeze Co is notably different in this respect. We earned our stripes in large processing plants around the world, designing, implementing and servicing some of the worlds largest, and efficient refrigeration and process cooling systems. Our products were borne out of these successes. From the ground-up, Freeze Co equipment is designed for the rigors of critical process cooling with higher liquid volumes and flows, more demanding thermal and mechanical performance, more sophisticated control systems and higher expectations for realibility, flexibility and low operating cost.



Valueable Capabilities

Freeze Co enjoys a unique set of in-house capabilities that provide our customers with a fully capable and accountable process cooling resource:

- **Complete Engineering**
- **Refrigeration Systems**
- **Reservoir/Pump Systems**
- **Piping Design and Assembly**
- **Evaporative Tower Systems**
- **Sheet Metal Working**
- **Control System Design**
- **Installation and Start-Up**
- **Mechanicals & Electricals**
- **Plumbing and Drainage**
- **Air Handling Systems**
- **Steam and Chemical Piping**

Successful Projects Start with Relationships

Process cooling infrastructure is a coordination of several disciplines and success drivers from site structure, current and future business goals and the economic costs of the equipment and its operation. Freeze Co, coming from a service orientation, well understands the importance of the smooth and complete communication flow, scope of work planning, documentation, and the professional dialogs that avoids surprises. Our experience in project work, and the management and coordination of work efforts across disciplines is a key differentiator that equals higher overall value, and reduced project risk for our customers.



Identify & Meet Mutual Goals

The success of our customers is our ultimate goal, providing cost effectiveness, robust designs to assure maximum up-time, professional installation and easy, low cost operation. We listen, and study to understand base line requirements, wish lists and constraints, and can provide a complete package of products and services, including refrigeration, mechanical, electricals and controls. Custom equipment mezzanines, air handling equipment, special components, special materials of construction and energy saving controls are common goals. Freeze Co can help you identify opportunities to provide thermal capacity and reduce operational costs in turn-key systems.

Staffed and Equipped

We are equipped to meet even ambitious process cooling requirements. Operating from a 104,000 sq. ft. facility, we have the people, the equipment and experience that spells success.



Central Refrigeration Plants

Customers are looking for ways to increase overall productivity, reduce product and process variance, and provide consistency in central utility services. Freeze Co has extra-ordinary experience in small to very large central refrigeration systems. Systems that include staged chiller skids to provide close capacity matching, redundancy and remote system control. Energy saving pumps, fans and controls, highly consistent chilled water pressure and temperature delivery, floor space savings, free-cooling modes and remote diagnostics and monitoring of performance are characteristic of our water system experience.



Central chiller skids using recip and screw compressors. Model shown is 400HP.

NEW Modular Chiller Systems are Expandable

Used for years in HVAC applications, Freeze Co has taken modularity for industrial applications to a whole new level. Rugged welded frame construction, rolled-groove connections, choice of scroll, recip or screw compressors and choice of condensers. Modular chillers can expand as your plant needs grow using lower incremental cost modules.

- Air-cooled, water cooled and split systems from 20 to 120 tons per module
- Easy-access strainer cleaning eliminates having to shut down and pull modules.
- Excellent choice for tight equipment rooms. Modules easily fit through doors.
- Single point electrical and piping connections. Optional pump modules.



Up to ten modules are assembled on-site. Cleaning strainers is a simple process.



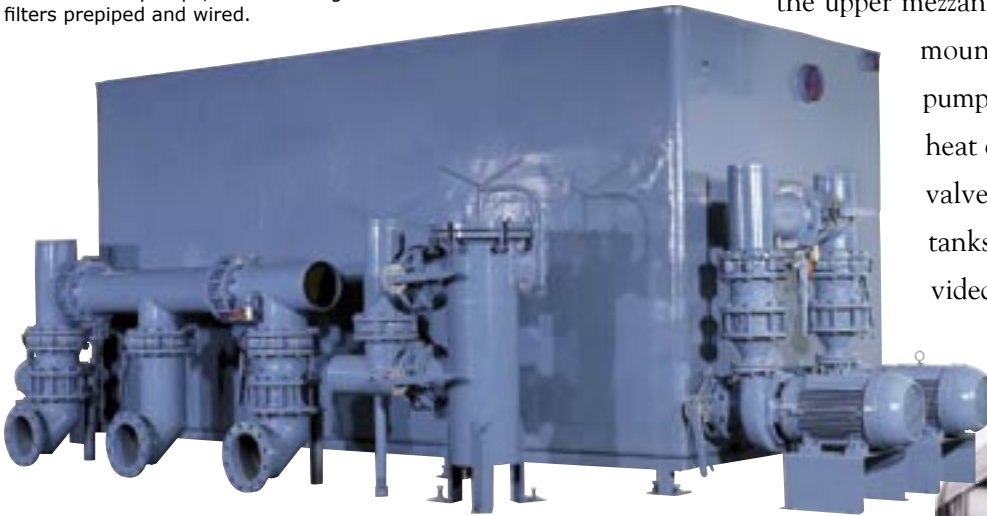
Tanks & Pumping Systems



Central tanks to 10,000 gallons and equipped with mounted pumps, heat exchangers and filters prepped and wired.

Our work with some of the worlds largest and most productive customers confirms that adequate reservoir volume is a worthwhile investment. In-ground concrete reservoirs using vertical turbine pumps or fabricated steel tanks from 150 to 10,000 gallons with end suction pumps are common requirements. We have built systems where tower and chilled water tanks are below ground; pumps, closed loop heat exchangers and full stream filters are above the tanks; and central chiller banks and controls are on the upper mezzanine. Evaporative towers are roof

mounted. Pre-engineered tanks and pumps are available with closed loop heat exchangers, filters and motorized valves installed and plumbed. Chiller tanks can have divided or partially divided cells for separating chilled water and tower water service.



Pressure, Temperature and Flow

Stable delivery of water or other thermal liquids at the optimal operating pressure and temperature is critical for many processes. Freeze Co can design and build systems engineered for consistent delivery of all types of process liquids. Special materials of construction, insulation and jacketing are common. We can configure systems with automatic control of system valves and actuators to reduce operation costs.



Outdoor Chiller Systems

Pharmaceuticals, chemicals, food processing and certain processes require LOW-TEMP chillers, which increases the compressor HP requirements. Freeze Co manufactures a complete line of air cooled chillers and remote condensers which can be applied to these higher HP needs. We can manufacture chillers, condensers, tanks pumps and filters which are suitable for outdoor installation. System shown below delivers 400 HP at minus 40 degrees F.



Of significance is our expertise with sophisticated PLC controls. Using premium quality components, the array of standard features and possibilities is impressive. Possibilities include tower fan speed, pump selection, motorized valve operation for free-cooling, or component isolation. Control systems include refrigerant pressure safeties, water flow safety, compressor staging and lead/lag pump rotation. Options can include compressor motor and condenser fan speed controls for the ultimate in energy efficiency. Components are non-proprietary. Terminals are clearly identified. Advanced web-enabled remote control and performance monitoring and alerting is also available.

Full-Flow or Side-Stream Filtration

Filtration, often neglected, can spell the difference in how well a process water system performs. System cleanliness is a major factor in the total cost of ownership. Scale, corrosion, rust and other particulate can result in higher operating costs, damaged process equipment and unplanned downtime. Freeze Co manufactures a line of full-stream strainer systems featuring a customized stainless steel, welded-wedge-wire insert. The system allows quick service and can be fitted with motorized valves for automatic backflushing as pressure drops increase.

Freeze Co can also provide side-stream filtration systems, which use sand-and-gravel media to filter smaller particle sizes than welded-wire. Filter systems can be installed within pump rooms to take advantage of header access, or can be installed right on the pump deck of a fabricated water tank.



Cooling Tower Systems

Proper evaporative tower selection involves many factors including site layout, load bearing members, prevailing wind direction, adjacent structures, local wet bulb rating, distance to other components and other site, control and system considerations. It takes experts to do it right, meeting current process needs, yet allowing a practical path to modify or expand the system both physically and thermally.

Freeze Co can provide all types of cooling towers from our own economical fiberglass models, to purchased cross-flow, counterflow and forced draft technologies to meet individual conditions. Systems can have non-corrosive construction for harsh environments.

Cooling tower systems are available with closed-loop and free-cooling options to automatically shut-down refrigeration equipment and shift the cooling load directly to evaporative tower cells when ambient temperature permits. Closed loop plate and frame heat exchangers and matching pumps are carefully selected to maximize approach temperature and pressure drop. Also common are side-stream or full-flow filtration systems, heat trace piping, closed-cell insulation, elevating structures and other thermal and mechanical requirements.



Rejecting heat outdoors can involve steel or FRP tower cells, remote condensers and specialized NEMA rated controls.



Refrigeration & Process Cooling Products

Portable Air-Cooled Chillers

Models are available from 1 to 20 tons in highly compact design. Models feature reciprocating hermetic compressors. Features include generously sized insulated stainless steel tank and separate process and chiller pumps. Systems available with analog or PLC based controls. Side panels remove for easy access to components. All models are run tested under load and ship with a full refrigerant charge.

Refer to Product Type FCAC, FCWC or FCAR.



Compact, Low Cost, Water Cooled Chillers

Models are available from 40 to 80 tons in highly compact design. Open frame reduces cost and improves component access. Models feature reciprocating semi-hermetic compressors. Ideal for split systems with remote tank and pumping system. Systems available with analog or PLC based controls. All models are run tested under load and ship with a full refrigerant charge.

Refer to Product Type CFW or CFAR.



Central Air or Water Cooled Chillers

Models are available from 40 to over 400 tons in compact, rugged design. Open frame improves component access and maximizes floorspace. Models equipped with individually circuited reciprocating semi-hermetic or screw compressors. Ideal for split systems with remote tank and pumping system. Up to 12 unloading increments. Systems available with analog or PLC controls and remote communication port. All models are run tested under load and ship with a full refrigerant charge.

Refer to Product Type WCT.



Central Cooling Tower & Pumping Systems

There is virtually no limit to how we can approach and implement cooling system designs. In-house design capability includes piping systems, service drop stations, evaporative towers, free cooling and heat recovery, forced air systems, air and liquid filtration, elevated equipment mezzanines, and remote diagnostics. With our own mechanical crews, we design, install and service cooling systems worldwide.



NEW! REFRIGERATED AIR DRYERS

A new range of air and water cooled compressed air drying systems is now available. Portable and central systems use non-regenerative principle (consistent flow and heat load). Contact the factory for selections and quotations.



104,000 Sq.Ft. Refrigeration and Mechanical System Center

Perhaps no other manufacturer of industrial process cooling equipment has so much to offer under one roof. In addition to world-class refrigeration equipment assembly and testing, we have staff who specialize in designing and installing HVAC and process cooling systems. System and controls engineering, industrial piping systems, complete electricals, sheet metal, hoist equipment, installation and start-up.

In the USA, call your local Freeze-Co Sales Representative listed below. USA Office: 404-231-0720. Get complete information on the Web at www.freeze-co.com

Represented By:

Freeze-Co Systems, Ltd.

2100 Steeles Avenue E.
Brampton, ON L6T 1A7
Phone: (905) 789-9988
(800) 339-8982
Fax: (905) 789-9989