



# INDUSTRIAL PROCESS COOLING

## Unique Retrofit Challenge



Recently Cimco Industrial Process Cooling successfully completed a large and difficult retrofit in one of Canada's foremost packaging plants.

The project assignment was to engineer, manufacture and install a new centralized chilling system in an already up and running facility. The objective was to significantly increase efficiency, and reduce downtimes and maintenance costs. To meet the objective, Cimco first had to engineer a high efficiency system with a small footprint to fit into a very limited space.

The next phase was to plan and coordinate an installation that would keep downtime of the existing operation to a bare minimum. To further complicate the installation,

the 7 existing portable chillers, located throughout the plant, had to be removed at the same time. With thorough pre-planning and preparation, the installation team was able to complete the retrofit to the complete satisfaction of the customer. In fact, the plant was up and running ahead of schedule and with substantially increased productivity.

### General Project Requirements:

- Design and manufacture new 180 ton 3 circuit chiller utilizing screw compressor technology for maximum efficiency and reduced down time.
- Provide new chilled water loop around plant.
- Install new chilled water tank set
- Modify the existing tower water loop to suit new plant layout
- 2000 ft of 6" PVC sch. 80 pipe
- Fabricate a 45 USGPM filter pump skid, including bag filter with pressure differential alarm for indication of servicing. The filter housing is capable of handling 90 USGPM and provides extended dwell times between filter changes

## "Looking for a cost effective tower water tank system?"



Cimco provides complete pre-assembled packages that minimize on-site assembly and labour costs. Tower water tanks are available with a pre-piped water treatment system, pre-wired and mounted starter and electrical panel, two process pumps and two tower pumps. In addition, tanks are supplied with connections on opposite end of tank for future expansion of the system.

Tank is 3/16 SS 304 with all welded seams - 8 ft x 8 ft x 8ft.



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## Cooling Equipment Seminar

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# PRODUCT & SERVICE TIPS

## Frozen Chilled Water Evaporators

Occasionally industry service technicians are faced with frozen chilled water evaporators. Sometimes even when the flow switch and freeze protection thermostat are in verified operation, the evaporators still freeze. One such instance occurred after a customer turned off the evaporator pump, letting the chiller's flow switch disable the chiller on a no-flow condition. The customer didn't turn off the chiller at the chiller panel because it was located up on a mezzanine. This one time, after the evaporator pump was turned off, the chiller's flow switch failed and indicated that flow was still present. The thermostat called for cooling, the compressor ran, the freeze stat was too far from the evaporator tubes, and the unit froze (a \$10,000 repair).

Proper procedure would have been to turn the chiller off at its control switch, which both allows the unit to shut down after going through a pump down (if so equipped), and then be locked out and prevented from running even if the flow switch was not functioning.

## Relief Valves

Pressure safety relief valves are designed to prevent pressure from rising above safe limits when operating controls fail or when the system is exposed to excessive temperatures or heat.

A pressure relief valve is held closed by a spring or other means and is designed to automatically relieve at a predetermined pressure. A pressure relief valve should safely relieve system over-pressure at a controlled rate in order to prevent catastrophic equipment failure, potential property damage, personal injury, or death.

Relief valves should always be selected by knowledgeable designers familiar with the applicable codes and standards.

A relief valve that has popped open should be replaced promptly by a qualified service technician, even if it appears to have re-seated itself.

**"I can count on Cimco to provide me with prompt, reliable service professionals. The few times that an emergency has occurred in the middle of the night, someone was quickly on site to correct the problem. They obviously have the resources and manpower to tackle any project, which results in less downtime for my plant."**

***—Henry Fornalczyk  
Salga Associates***



Downtime and emergency repairs cost money. Our special one-day seminar will help you help eliminate many of your process cooling maintenance problems. Highly trained instructors will provide you with technical information and practical preventative maintenance ideas.

### **Topics include:**

- basic cooling process principles
- proper operation and tuning
- maintenance procedures
- controls and automation
- trouble tracing

***Book today for our next seminar by calling Roberto Stillisano at: (416) 465-3987.***



# ARE YOU UP TO CODE?

## Top Ten: Ontario Installation Requirements For Chiller Systems Larger Than 3 Tons

- 1 All systems must be in compliance with CSA Standard B52 Mechanical Refrigeration Code.
- 2 All systems must be registered with the Technical Standards and Safety Authority (TSSA).
- 3 A "P-Number" is assigned by the TSSA as proof of registration. This applies to both field built-up and packaged skid assembled systems.
- 4 Field installed refrigerant piping must be inspected by the TSSA.
- 5 Shop fabricated packaged systems must be inspected by the TSSA.
- 6 All brazing and welding procedures must be registered with the TSSA.
- 7 All welding or brazing personnel must have valid "tickets" from the TSSA. This is a separate document from the one described in (6) above.
- 8 A nameplate must be affixed to all systems and include manufacturer's name, identification number, test pressures, and refrigerant.
- 9 Overpressure protection must be provided.
- 10 All system pressure vessels must comply with CSA Standard B51 and have a Canadian Registration Number (CRN) stamped on the Code nameplate.

***Always make sure that you are buying equipment that meets at least the minimum requirements!***



## PRODUCTS, SERVICE, SUPPORT.

### MANUFACTURER OF INDUSTRIAL COOLING SYSTEMS

- Closed Loop Barrier Systems
- Chiller Packages
- Stainless Steel Tanks
- Pumping Stations
- Filtration Systems
- Water Systems
- PLC and Starter panels

### SERVICE

- 24 HR Emergency Service
- 22 North American Service Centres
- 150 Service Technicians
- Qualified Service Personnel
- Custom Tailored Service Programs
- Compressor Rebuilds
- Cooling Tower Rebuilds
- Alternate Refrigerants
- Oil Analysis

### SUPPORT

- 70,000 Square Ft. Custom Manufacturing Facility
- Large Parts Warehouse
- Piping Installations
- 40 Engineers
- Plant Evaluations
- Plant Layouts
- Project Site Supervision and Commissioning

Since 1913 Cimco continues to be a worldwide leader in the design, engineering, manufacturing, installation and service of industrial refrigeration and process systems. Our long-term, total commitment to our customers remains unchanged. Cimco believes in maintaining



equipment to the highest standards to ensure peak operating efficiency and production. Whether you are designing, installing or servicing you can count on sound advice and economical solutions from our skilled service technicians and engineers.

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## MOTOR MAINTENANCE – Grease Intervals

Motors should be lubricated according to the motor manufacturer's recommendation – only. If this information is missing, then the following general guidelines can be used.

### Fractional Horsepower Sleeve Bearing Motors:

Under ordinary temperatures and clean surroundings, these motors can operate for up to three years without re-lubrication. Use electric motor oil or SAE 10 oil. Under continuous operation at higher temperatures (up to 104°F), re-lubricate annually.

### Fractional Horsepower Ball Bearing Motors:

Under ordinary temperatures and clean surroundings, ball bearing motors can operate for up to five years without re-lubrication. Under continuous operation at higher temperatures (up to 104°F) re-lubricate annually. To re-lubricate motors without pressure fittings, disassemble motor and clean bearings thoroughly. Repack bearings one-third full with ball bearing grease.

### Integral Horsepower Sleeve Bearing Motors:

Motors having pipe plus or grease fittings should be re-lubricated while warm and at a standstill, at the following intervals:

H.P. Range	Standard Duty (8 hr./day)	Severe Duty (24 hr./day) Dusty Dirty	Extreme Duty Very Dirty High Ambient
1.5 – 7.5	5 years	3 years	9 months
10 – 40	3 years	1 year	4 months
50 – 150	1 year	9 months	4 months



## CIMCO REFRIGERATION

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Please direct all correspondence to Cimco Refrigeration, C/O Industrial Process Cooling

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