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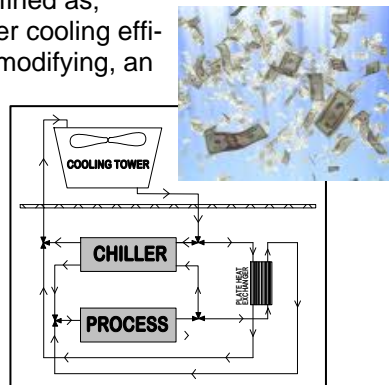


LINKS

- [API Heat Transfer](#)
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- [Des Champs Labs \(Munters\)](#)
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Free Cooling

We are taught that nothing is free. This does apply to the concept of "Free Cooling" because there is still an energy input requires (albeit less) as well as costs to modify existing systems. However, it does make sense to utilize existing infrastructure and our cold winters to reduce the energy input for cooling. The term Free Cooling is very broad in scope but might best be defined as; achieving significantly higher cooling efficiencies by adding to, and modifying, an existing chilling system to take advantage of seasonally lower ambient temperatures. We have a tremendous potential here in our climate to significantly reduce our energy inputs to cooling.

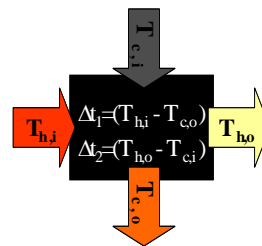


[More Details on Free Cooling](#)
[Details on Wet / Dry Aircoolers](#)

Benchmarking Performance:

A common situation we encounter is the need to replace an existing heat exchanger where there is little information known about either the construction or the performance. Frequently heat exchangers were supplied with limited performance and construction information or the heat exchanger manufacturer is no longer in existence so the end user is forced to estimate the size, construction and performance when the unit needs replacing.

Changes in technology or an increase in required performance can render the existing heat exchanger obsolete or drive the demand for replacement. In such cases the replacement heat exchanger will be a different design than the existing unit. If the all the construction or performance specifications of the existing heat exchanger are not known (as is often the case), a benchmark for performance needs to be established in order to design a replacement. Provided with some general information about the existing exchanger and some general process information, a rating of the existing exchanger can often be developed or at least approximated. Using our thermal programs, design background and experience we can often model the existing heat exchanger to establish a performance benchmark from which to base a replacement design.



Domestically Supplied Heat Exchangers and Parts:

A common occurrence in the replacement of heat exchangers is the requirement to duplicate an exchanger that is a component of a system that was manufactured off shore. In many cases the heat exchanger is either not available in North America or the price and lead-time cannot be tolerated. Cost and aggravation can be avoided if, at the stage where the capital equipment is purchased, the specification calls for domestically manufactured heat exchangers. The following equipment typically package heat exchangers as an integral component of the system;

- [Compressors](#)
- [Lube Oil Consoles](#)
- [Gear Boxes](#)
- [Tanks](#)
- [Dryers](#)

- [Drives and Motors](#)
- [Transformers](#)
- [Generators](#)
- [Hot Oil Systems](#)
- [Extruders](#)



We recommend, for ease of replacement, that the specification for the above equipment include a statement that the replaceable components be available from a North American suppliers.

In other cases, the application of "standard" heat exchangers designed for the less extreme loads and conditions found elsewhere in the world, do not perform as designed in the Canadian summers and winters. Most standard equipment is not designed to operate in -40°C to $+40^{\circ}\text{C}$ ambient temperature range or with 4°C cooling water available. This range of temperatures can result in changes in fluid viscosity or varying flow rates that were not considered in the original heat exchanger design.



Typically there is enough information available to replace exchangers manufactured overseas, or to adapt the design to better suit the actual operating conditions.

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