

With more than 50 years of experience in compressor technology and highly committed employees, our focus is to develop and apply the advanced

compressor technologies to achieve standard setting performance for leading products and businesses around the world.

CASE STORY MANITOWOC ICE

TAKING ENVIRONMENT-FRIENDLY COMPRESSORS TO THE NEXT LEVEL



Fuelled by an increasing market interest in environment-friendly systems, Manitowoc Ice turned to Danfoss and Secop with the idea of designing ice machines that would improve customer's sustainability efforts by operating on natural refrigerants.

The commercial food service and related industries rely daily on large quantities of ice for food displays, safety, preparations, drinks etc.

What matters most is the ability to produce ice in the most reliable and cost-efficient way and still meet the ever-increasing demands regarding sustainability.

In order to keep ahead of both competition and legislation the Wisconsin-based manufacturer of commercial ice machines, Manitowoc Ice, asked Danfoss and Secop to help take their product portfolio one step further.

The aim was simple but ambitious: Develop ice machines operating on natural refrigerants and set a new global standard for environmental friendliness.

CONVERTING TO NATURAL REFRIGERANTS.

The first collaborative project was Manitowoc's 500-pound ice machine. To convert the ice machine to natural refrigerants, Secop replaced a compressor using R404A, a hydrofluorocarbon (HFC), with a new compressor designed for R290, a hydrocarbon (HC-Propane).

Knowing it would also help reduce energy use, Secop chose to install one of its SC Series compressors (SC18CNX) for the R290, which features a reliable, compact design, specially optimized valves and a motor with international protection – optimized

for R290 and meeting all the safety demand using hydrocarbons.

To further improve the efficiency, a unique thermostatic expansion valve was installed, this optimized the charge and regulate the injection of the refrigerant. A new micro channel condenser was also added.

The results were impressive. Although replacing the normal R404A, the new system is able to maintain ice production capacity at the same high level, while staying within the 150 g. charge limit. Moreover, there is 20 to 30% savings on energy with comparable ice machines.

So far, the collaboration has led to the development of two new models within Manitowoc's Indigo Series and a Q-Series under-counter unit.

READY TO RESHAPE THE MARKET.

With the addition of energy efficient hydrocarbon ice machines, Manitowoc has gained a new competitive edge, showing that it is possible to create sustainable solutions without compromising reliability and production capacity.

The ice machines are being manufactured and sold to the European market, but there is no doubt that Manitowoc cannot wait to reshape more markets, especially USA.

"We believe the R290 ice machines will become much more relevant here in the United States over the coming years –and we'll be prepared with environmentally friendly and energy efficient ice machines when that day comes", says Greg Erickson, Field Marketing Manager at Manitowoc Ice.

