



“Since the switch, we’ve been running the ice arena floor 3 degrees higher than before. Performax LT (R-407F) is that efficient.”
— Jon Erickson, Bernick’s Ice Arena Facilities Manager

Improving Ice Arena Efficiency

With the Refrigeration Performance of Honeywell Genetron Performax[®] LT (R-407F)



The Challenge

An ice arena in Minnesota needed a reliable refrigerant to replace R-22, which is both expensive and being phased out by the U.S. EPA.

The Solution

Retrofit with Honeywell Genetron Performax[®] LT (R-407F), which delivers industry-leading efficiency along with a mass flow that matches R-22 in retrofit applications.

Set Up

Bernick’s Ice Arena, built by Winkelman Building Corporation of St. Cloud, MN, is one of the most technologically advanced ice arenas in Minnesota. To update their building and 30,000 square-foot arena floor, they recently completed many projects. In the process, they also decided to move to a more energy-efficient and lower-global-warming refrigerant product.

Honeywell is one of the industry leaders in refrigerants, but like Bernick’s they were looking to improve. Partnering with Bernick’s and St. Cloud Refrigeration on this project allowed them to explore a market with great potential.

“It’s exciting to be the first in the industry to switch to Performax LT,” said Jon Erickson, facilities manager at Bernick’s Ice Arena. “We need reliable products that produce high quality ice and reduce our energy consumption. Ultimately, Performax LT will get us even closer to being the facility we want to be.”

Decision

Performax LT is a natural fit for ice arenas, and Erickson saw the untapped potential within his market. The Honeywell product fit the requirements of their current indirect system, has staying power and is listed under the U.S. EPA SNAP program.

“Since we wanted to retrofit our system instead of replacing it, Performax LT was the perfect choice. It works very well and requires a similar amount of refrigerant, mirroring the R-22 we were already using.”



Genetron Performax[®] LT
(R-407F)



Genetron[®] 22
(R-22)



Mighty Ducks Grant Program

The Minnesota legislature appropriated \$2.2 million to the Mighty Ducks Grant Program for ice arenas in 2015. The grant focuses on allowing ice arenas to make improvements to their facilities by eliminating the use of R-22 refrigerant, bettering indoor air quality, and adding new ice facilities around the state.

Bernick's was awarded the grant to retrofit their facility and chose to utilize a portion of the funds to retrofit with Honeywell's Performax LT as the cost is significantly less than a full changeout. By utilizing only a portion of the funds, Bernick's was able to improve other areas of the arena as well, increasing energy efficiency in the facility overall.



The Project

Bernick's Ice Arena

The retrofit was complete within a week as planned. To make way for the new Performax LT, St. Cloud Refrigeration removed the R-22 from the system.

The contractor for the project, Mark Fitch of St. Cloud Refrigeration Dba SCR, said "SCR enjoyed working with Honeywell, Bernick's Arena, and Sartell Youth Hockey on this R-407F conversion. Now Bernick's Arena doesn't have to worry about the R-22 phase out and has a more environmentally friendly refrigerant in R-407F. Overall, I was impressed with how easily the system was installed and how smoothly the project ran while working with Honeywell."

With the project complete, Bernick's continued as normal, working to build up the ice to achieve a usable surface. The steps to building the arena floor include cooling it, flooding it and allowing it to freeze, painting the base and lines and then flooding it again. With Performax LT, the floor only took 6 days to cool as opposed to 7 and the rink was flooded in half the amount of floods than with R-22.

The floor cools faster, resulting in the water on top freezing faster. Previously, the floor temperature was set at 18 degrees to keep the ice at an ideal temperature for customers. Now, Bernick's achieves the same results while keeping the floor set 3 degrees higher at 21 degrees. Adding to the benefits, this means the compressors don't have to run as hard, which lengthens their life and contributes to energy savings.

"Everyone we worked with did a great job," said Erickson. "We definitely recommend other arenas to make the change. The performance and energy savings are there and we believe they will continue to be evident over time."

Choosing a retrofit over an entire system replacement saved Bernick's over \$100,000. With the savings, they've been able to make additional improvements to the facility, making it a truly state-of-the-art ice arena.

Honeywell hopes to help other arenas make the switch. Following the retrofit and overall facility improvements, Bernick's invited 40 Minnesota Arena Managers to an open house. They were able to experience first-hand the advantages of switching to Performax LT and the impact it could have on their own facilities.

For more information:
www.honeywell-refrigerants.com

Honeywell Advanced Materials

115 Tabor Road
Morris Plains, NJ 07950

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2834 REF v1 | April 2018

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