



### *Challenge*

House of Spices, a family-owned national supplier of seasonings and ethnic foods, that started out in the 1970s with a Queens, New York storefront, has grown to be a leader in flavor and one of the most respected and familiar names in the industry. The company manufactures, markets, and distributes a wide variety of flavorful products from twelve major distribution centers across North America to retail outlets, food manufacturers and food-service businesses.

They recently decided to build a Chicago-area facility to help keep pace with their rapidly expanding business and better serve their Midwest market. A new distribution center would need to have:

- Two freezers and two coolers
- Each running at a different temperature
- From two different suction groups — one low-temp and one medium-temp

### *Priorities*

Along with these requirements, other factors for the company were critically important. Foremost among these was that they not use HFC refrigerants.

House of Spices, like many system operators, was looking for alternatives to traditional synthetic refrigerants. A growing awareness of the environmental consequences of industry's longtime reliance on these refrigerants, and the mounting regulatory hurdles their continued use imposes upon users, has caused a shift in attitudes. But as more and more businesses that rely on refrigeration

contend with both the threats to the environment and the steps governments and industry groups are taking to counter those risks multiply, they are faced with a dilemma of what to do about it.

The company knew, at least a basic level, some of the concerns surrounding synthetic refrigerants. Basically, these amount to the fact that starting 20 years ago with the banning of CFCs such as R-12—ozone depletion potential (ODP) of 1.0, and a global warming potential (GWP) of 2,400—other approaches came into use that sought to reduce harm to the environment those refrigerants caused. These have included among others, hydrofluorocarbons (HFCs) that have lower ODPs but even higher GWPs such as HFC R-404A (ODP of 0, GWP of 3,300). Recognition of the continuing threat posed by these refrigerants led to them only being seen as an interim step toward eventual more benign alternatives.



### Answer

Abraham Phillip, the company's Midwest regional manager, says "we were aware of the growing threats to our environment and the onslaught of resulting regulatory actions." He continued that "we wanted to be part of the solution and not part of the problem." And that they saw "establishing 'environmentally friendly' as our top priority."

Fortunately for House of Spices, Zone Mechanical knew the field and the options available to meet their needs. An approach that has over the past decade come into practice is one that eliminates the use of synthetic refrigerants opting instead for "natural" refrigerants. These include, particularly in industrial applications, such longtime relied upon ones as ammonia and more recently, CO<sub>2</sub>. Ammonia, however, in confined spaces is highly toxic whereas CO<sub>2</sub> generally is not.

Highly regarded and experienced refrigeration contractor Zone Mechanical has a basically flawless track record of meeting their customers' needs with Advansor CO<sub>2</sub> booster systems from Hillphoenix. House of Spices specific set of requirements were ones that Zone and Hillphoenix had the solution which would meet those needs.

The system that Zone and Hillphoenix designed, built, and installed for House of Spices was comprised of:

- Two freezers, each at a different temperature — one running @ 0°F and the other running @ -10°F — with three compressors serving the low-temp loads
- Two coolers, each at a different temperature — one running @ 40°F with the other running @ 33°F — with four compressors serving the medium-temp loads
- Two different suction groups — one low-temp and one medium-temp
- Electric defrost — so that the system would benefit from the faster pulldown of CO<sub>2</sub> compared to other DX system refrigerants
- Micro Thermo controller technology providing complete operational system control and performance monitoring

Initially, "we wondered about system cost and gas availability," remembers Philip, the regional manager. "The folks at Zone Mechanical did a great job of answering all of our questions. They showed us that a Hillphoenix CO<sub>2</sub> system installation cost was quite affordable, made even more attractive with the inherent CO<sub>2</sub> system benefits, including reduced maintenance cost and low-cost, readily available gas."

### Result

As the project progressed, House of Spices found that the cost to install the system was not only affordable but that the whole approach was even more attractive given the inherent benefits of CO<sub>2</sub> systems including reduced maintenance and low-cost, readily available gas. An even greater attraction was that it made the operation "future-proof" since CO<sub>2</sub> with its essentially non-existent GWP and ODP characteristics all but eliminates the regulatory burdens of HFC systems. Besides the company's top priority of being environmentally friendly, "it gave us the assurance that we would not have to go through any costly refrigerant changeout in the future — a peace-of-mind for our business going forward that meant a great deal to us," said Philip. These factors more than offset any concerns House of Spices had going into the project. He went on to say that "it sure helps us to sleep well at night!"