R744.
CO₂ COOLING MARKETPLACE

Epta
Advanced Solutions for your Store

Epta to Incorporate Pressure-Exchanger Device to Boost Efficiency of Its CO_2 Systems

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KC Chen, VP of CO2 at Energy Recovery, describing Energy Recovery's partnership with Epta at EuroShop,

Energy Recovery, a San Leandro, California-based manufacturer of pressure-exchanger devices, announced last week at the EuroShop trade show in Düsseldorf, Germany, that its PX G1300 energy recovery device will be a "featured component" of Epta Group's next-generation commercial CO_2 (R744) refrigeration technology, the XTE (Extra Transcritical Efficiency).

The XTE, like Epta's predecessor technologies FTE (Full Transcritical Efficiency) and ETE (Extreme Temperature Efficiency), is designed to increase the efficiency of Epta's transcritical CO_2 refrigeration systems in warm ambient climates.

"We are excited to work alongside an established player in the European market, who brings extensive experience in the CO_2 refrigeration industry to the table," said KC Chen, Energy Recovery's Vice President of CO_2, in a statement. "CO_2 refrigeration is a sustainable alternative to climate-damaging hydrofluorocarbons, but it comes with a catch, especially when it's hot outside – it uses a lot of energy. The PX G1300 offers a reliable way to solve that challenge."

The first European supermarket to incorporate a PX G1300 energy-recovery device into an Epta CO_2 refrigeration system saw efficiency improvements of 25-30% at temperatures of 35-40°C (95-104°F), compared to a standard CO_2 booster system, according to Energy Recovery. The store is located in Italy.

Energy Recovery also announced at EuroShop that Belgian refrigeration cooling rack and service provider Fieuw Koeltechniekas will be the exclusive distributor in Belgium, the Netherlands and Luxembourg (Benelux) of its PX G1300 device.

Fieuw, which manufactures transcritical CO2 racks ranging from 30kW to 1.5mW, has deployed a CO_2 system at a Carrefour store in Belgium that uses two PX G1300 devices in parallel, noted Stefaan Bostyn, CEO of Fieuw; data on the energy savings at the store is being collected. Other stores in the region, as well as industrial plants, will be equipped with transcritical CO_2 systems using the pressure-exchanger device this year, he added.

In the U.S., the PX G1300 device has been installed at a Vallarta Supermarket in California, where energy savings data is also being collected.

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Capital expense neutrality

According to Energy Recovery, the PX G1300 delivers a range of benefits when applied to CO_2 refrigeration racks:

- Improved COP and lower energy consumption.
- Protection against thermal failures due to rising temperatures.
- Capital expense neutrality, as the capital costs of PX G1300-enabled CO_2 systems are equal or better than current COP upgrade technology. The pressure exchanger device eliminates the need for an adiabatic gas cooler or parallel compressor.
- Low maintenance costs due to the simplicity and durability of the device.

The PX G1300 pressure exchanger device recycles pressure energy within commercial and industrial systems, using high pressures that would otherwise be wasted to boost lower pressures, thereby reducing the work required by the compressors. The PX has been used as an energy recovery technology in seawater desalination for the last 25 years.

Energy Recovery is in discussions with other transcritical CO_2 OEMs about similar partnerships, noted Chen.