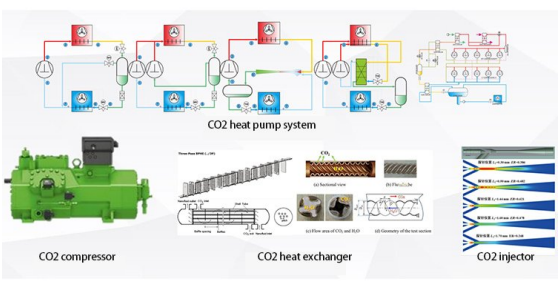
CO2 Refrigerant Heat Pump

This heat pump uses CO2 as a refrigerant for efficient heating and cooling. It is suitable for applications such as quick freezers, cold storage, and ice rinks.

ADDITIONAL IMAGES

Overview



Comprehensive system overview showing the integration of the CO2 compressor, heat exchanger, and injector technology.

High-Efficiency CO2 Transcritical Heat Pump

This industrial-grade heat pump utilizes R744 (CO2) as a natural refrigerant, offering an environmentally friendly and sustainable solution for large-scale thermal management. Designed for versatility, it supports combined cooling and heating applications, making it ideal for everything from ice rinks to industrial quick-freezing. With a modular design and customizable capacities, it provides reliable performance across a wide range of operating temperatures.

Technical Performance

Detailed view of the 2 MW level unit components including the efficient regenerator and four-way reversing valve.

Heating Capacity

0.1 MW	2.2 MW
Min Capacity	Max Capacity

Refrigerant

R744 • CO2

Hot Water Temperature Range	30°C to 120°C

Core Components

Compressor System

- Specialized CO2 piston compressor
- Efficient regenerator
- Efficient CO2 gas cooler
- Intercooler system
- CO2 four-way reversing valve

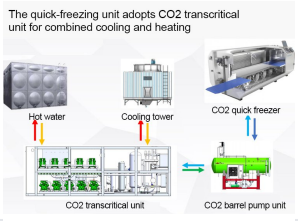
Efficiency Enhancements	Ejector Technology, Transcritical Cycle, Hot Gas Defrost, Injectors for Variable Conditions

System Configuration

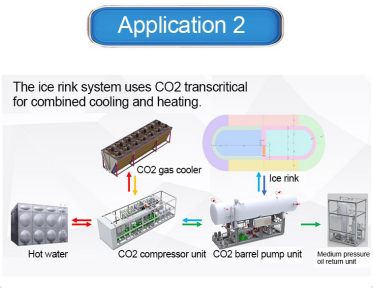
Robust control interface designed for precise operation and monitoring in industrial environments.

Heat Source Types	Air Source, Water Source
Electrical Compatibility	Universal (Can meet any country's electricity system)

Applications



System configuration for combined cooling and heating in quick-freezing applications.

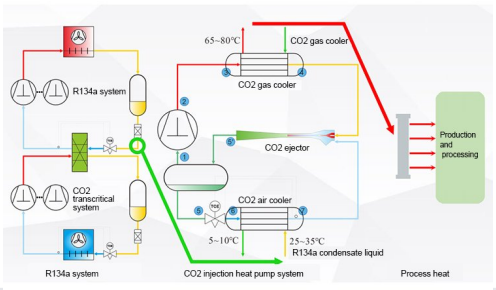


CO2 transcritical technology applied to ice rink temperature management, integrating cooling and hot water systems.

Industrial Applications

- Quick freezer units
- Cold storage facilities
- Ice rink cooling and heating
- Air conditioning systems
- Industrial water heating
- Process heat for production

Operational Data



Technical diagram illustrating the integration of CO2 injection heat pumps with existing R134a systems for process heat.

Operating Temperatures

Component	Temperature Range
CO2 Gas Cooler	65°C - 80°C
CO2 Air Cooler	5°C - 10°C
R134a Condensate (Hybrid)	25°C - 35°C