

# Logistics center solutions



More than 70% of the electricity used at refrigerated warehouses is used by the cooling equipment.

Mayekawa offers integrated technology solutions to realize sustainable refrigerated warehouses delivering advanced functionality and performance.

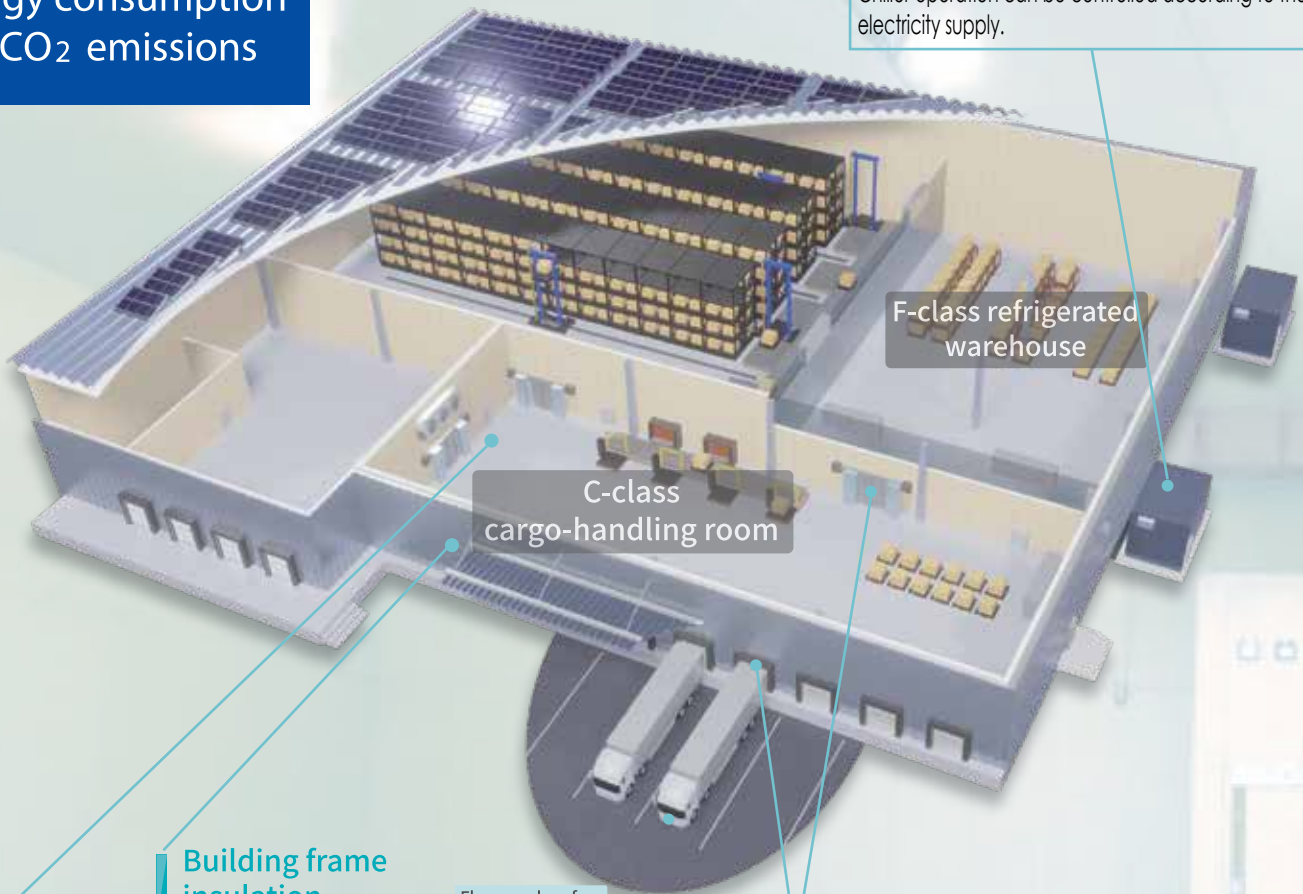
Solutions to reduce energy consumption and CO<sub>2</sub> emissions

cooling system Fluorocarbon free

## NH<sub>3</sub>/CO<sub>2</sub>

### Demand-response control

Chiller operation can be controlled according to the electricity supply.



F-class refrigerated warehouse

C-class cargo-handling room

### Building frame insulation

Fluorocarbon free

Fluorocarbon-free insulation materials are used to block heat emitted from the building frame.

### Positive-pressure dehumidification system

Creating a higher air pressure in the cargo-handling rooms than the outside air prevents outdoor air from entering the rooms, while a dehumidifier supplies low-temperature, dry air to the rooms. This prevents condensation and reduces the number of defrosting cycles in F-class refrigerated warehouses.

### Heat shield air curtain



Heat Shield Air Curtain "Thermoshutter"

- Stable storage temperature ensures product quality.
- Less condensation and frost in a cold storage facility decreases the defrost frequency.
- Prevention of heat loss reduces power consumption.



CO<sub>2</sub> Heat Pump Desiccant Dehumidifier "chris"



Before

Before installation



After

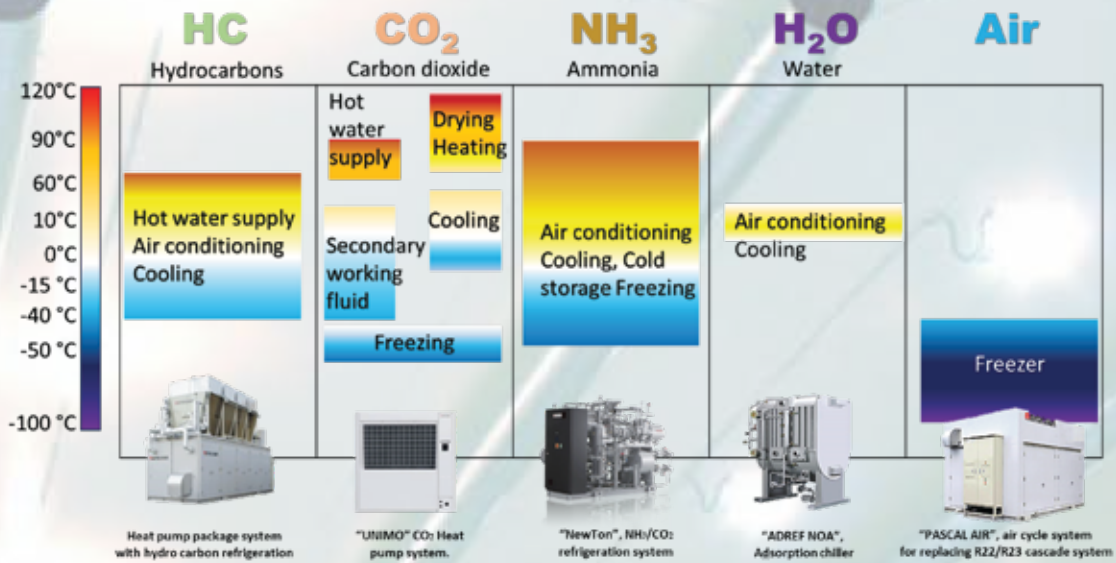
After installation

### Using waste heat to heat defrost water

Using unutilized heat

Defrost water of which the temperature has fallen from melting frost is heated using waste heat from the chiller for cyclical use.

**We** support sustainable development, eliminate ozone layer depletion and help prevent global warming by the Natural Five.



## NH<sub>3</sub>/CO<sub>2</sub> cooling system



Highly energy efficient, NewTon reduces the power consumption of the entire system, thus contributing to the reduction of energy-derived CO<sub>2</sub>. Additionally, there is a rich lineup of NewTon products that have been designed to always operate efficiently in line with customer needs from freezer warehouses, cold storages, loading rooms, freezers, vacuum freezing, soil freezing, skating rinks and ice making.

## Thermo shutter

Thermo-shutter has been adopted in a number of industries to high praise, including cold storage, logistic centers and loading docks.



Cold storage  
Inside -25°C / Outside 5°C  
Size: 3,000mm (h) x 2,600mm (w)  
Door opening by Pull switch



Stats for outside installation on loading docks  
Inside 5°C / Outside air temperature  
Size: 2,000mm (h) x 2,600mm (w)  
Upward sliding door



Cold storage  
Inside -25°C / Outside -5°C  
Size: 2,600mm (h) x 2,200mm (w)  
Door opening by Pull switch

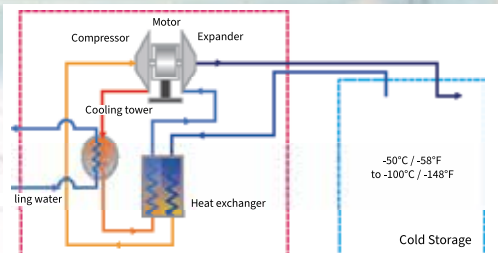
## PascalAir

**Realizing the world of -100°C/-150°F degrees using only air as the primary refrigerant**

Pascal Air is a refrigeration system using the ultimate natural working fluid, Air. It compresses air, removes the compression heat, and expands the air adiabatically to cool a cold storage room.

**Ultra-low temperature(-55°C) cold storage with the capacity of 8K ton**

**Flow Chart**



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