

Market Potential of Transcritical CO₂ unit for Industrial Refrigeration

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Company Profile



Tokyo Office

- Head office: Tokyo
- Factory: Shiga, Osaka
- Service Center: Tokyo, Osaka and Fukuoka
- Employee: 80
- Founded: 1987
- Products: AC Heat Pump, Industrial Refrigeration Chiller, CO₂ Chiller, Geo Thermal Heat Pump



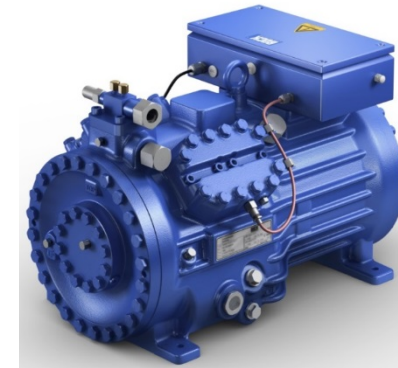
Shiga Factory



Production Line

Development of CO₂ unit in Japan

- Start development in 2012.
- Fit to Japanese climate.
- Especially hot summer is the subject to overcome.
- Development together with several European companies.
- Development together with Fukushima for supermarket and freezer application.



CO₂ Test Unit



CO₂ Showcase MT & LT



CO₂ Alarm

CO₂ unit “Super Green” Model 2016



Outdoor Type

CO₂ BOOSTER SUPER GREEN

engineering by JECSO 日本熱源システム株式会社

Model 2016

- 0°C Type C-1 44kW, Type C-2 87kW
- -25°C Type F-1 35kW, Type F-2 70kW
- Application : Cold Storage
Distribution Center
Freezer for Food Industry
Supermarket

Reference: Cold Storage

- End-user Tohoku-Suisan, Fish Industry Cold Storage in Aomori
- Contractor Kochiwa Refrigeration and Construction
- Installation November 2016
- Specification F-2(35kW) 1unit (special model)
Room Temp -25°C
Room Size 2,200m²



Reference: Cold Storage

- End-user Shimakura-Suisan, Fish Industry Cold Storage in Aomori
- Contractor Kochiwa Refrigeration and Construction
- Installation February 2017
- Specification F-1(31kW) x 1unit
F-2 (61kW)x 2units
Room Temp -24°C
Room Size 15,100m²



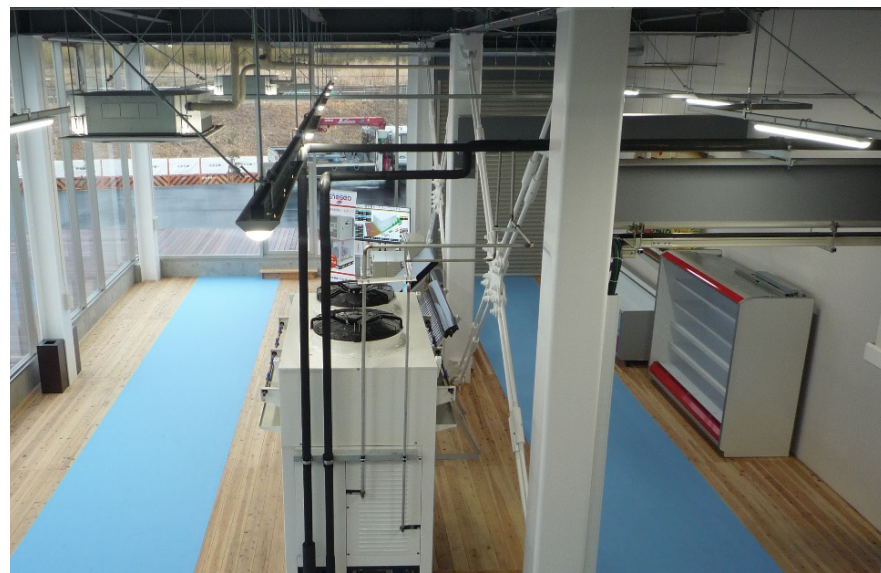
New Factory for CO₂ units

- Start operation, December 2017
- Production capacity; max 300 units/year



New Factory for CO₂ units

- New Show Room
- Exhibit CO₂ unit, Blu Astrum and Geo Thermal Heat Pump in operating condition



CO₂ unit “Super Green” Model 2018



CO₂ BOOSTER SUPER GREEN

engineering by  日本熱源システム株式会社

Model 2018

- **0°C** Type C-1 44kW, Type C-2 87kW
- **-25°C** Type F-1 35kW, Type F-2 70kW
- Feature : coil and unit with one box design
- Application : Cold Storage
Distribution Center
Freezer for Food Industry
Supermarket
- 2017-2018 February: 50units shipment

New Reference: Logistic Center

- End-user Kawai Ice and Cold Storage, Logistic Center in Fukuoka
- Specification F-2(68kW) x 8units -25°C
C-2(87kW)x 2units +5°C
- Start Operation May 2018



New Reference: Cold Storage

- End-user Yoshio Ice Manufacturing and Refrigeration, Cold Storage in Fukuoka
- Specification F-2(68kW) x 1unit -25°C
C-2(88kW)x 2units +5°C
- Start Operation April 2018



New Reference: Cold Storage

- End-user Tanaka Warehouse and Transportation, Cold storage in Hiroshima
- Specification Unit and gas-cooler separate type
 F-2(67kW) x 1unit -25°C
 C-2(88kW)x 1unit +10°C
- Start Operation March 2018



New Reference: Logistic Center

- End-user Hamamatsu Itaku Soko, Logistic Center in Shizuoka
- Specification Unit and gas-cooler separate type
F-2(67kW) x 2units -25°C
- Start Operation March 2018



New Reference: Cold Storage

- End-user Futaba Foods, Cold Storage for ice cream in Tochigi
- Specification F-2(67kW) x 1unit -25°C
- Start Operation January 2018



2018-2019 Expectation

- Applications
 - ✓ Cold storage
 - ✓ Logistic Center
 - ✓ Freezer for Food Industry
 - ✓ Medium and Large size of Supermarket
 - ✓ Margarine processing
 - ✓ Brewery and beverage company
- Expected number of units 2018-2019
 - ✓ **100 units**



New Product:

- New CO₂ product will be announced in autumn 2018

✓ Start development of **CO₂ brine chiller**

- Applications
 - ✓ Food and Beverage Industry
 - ✓ Chemical Industry

Thank you !