

Deep freeze store evaporator



Refrigerant: NH₃; CO₂ pump operation

Application area:

- deep freeze stores containing pre-cooled produce
- high rise stores
- stores with sliding shelves

advantages:

- even air distribution by means of pool of cold air in the cold store
- constant temperature in shelf area
- low connected load
- low investment costs

Güntner deep freeze store evaporator

Range of performance

refrigerating capacity: 15 - 100 KW

($\Delta t_1 = 10 \text{ K}$)

air quantity: 10,000 m³/h - 55,000 m³/h

fans: 1/2/3 pieces

$\varnothing = 650/710/800 \text{ mm}$

fin spacing: 7/10/12 mm



Floating coil system.

Construction

heat exchanger:

The tried and tested Güntner floating coil system makes it possible for the coil to expand without straining refrigerant-carrying tubes. Thus, there are no refrigerant losses due to leakages, and the service life of the heat exchanger coil is prolonged.

tube	fin	refrigerant
StZn	StZn	NH ₃
VA	Al	NH ₃
VA	Al-Epoxy	NH ₃
Cu	Al	CO ₂
Cu	Al-Epoxy	CO ₂
VA*	Al	CO ₂

* required for hot gas defrosting

casing:

- St, galvanized
- ingress of air horizontal
- air discharge downward

- fan chamber with inner insulation as protection against condensation water

drip tray:

- drop collector sheet with spiral or with electrical heating
- double-layer tray made of AlMg₃, with 19 mm insulation

fans:

- axial fan with low rotational speed
- two rotational speeds by means of Y/D-commutation
- thermocontacts

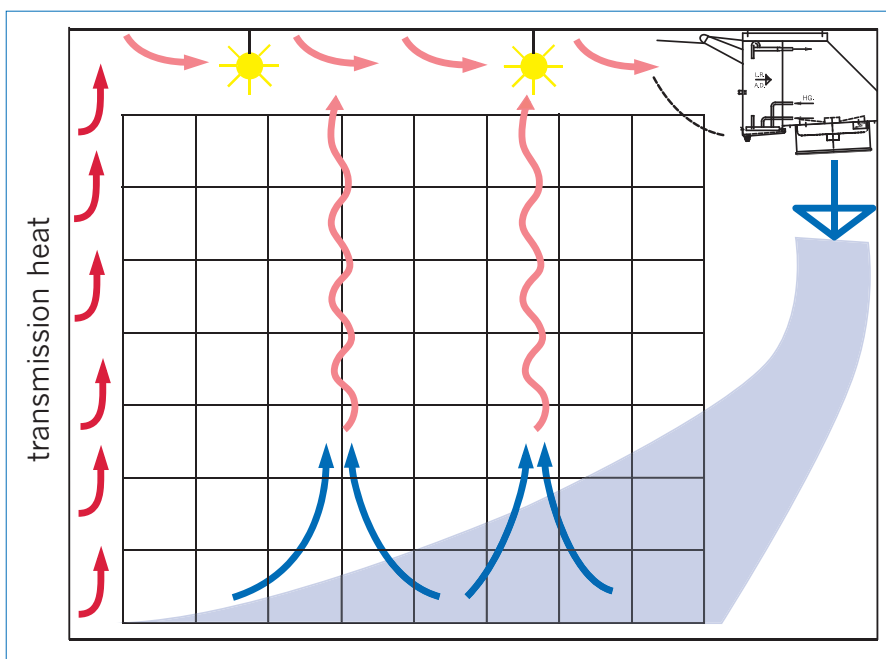
defrosting:

- hot gas defrosting
- electrical defrosting

defrost flap:

- insulated flap sheet
- in-line motor with winch
- flap frame with electrical heating
- sensors for signal OPEN/SHUT

Air distribution in deep freeze stores with Güntner deep freeze store evaporators



Installation and assembly.

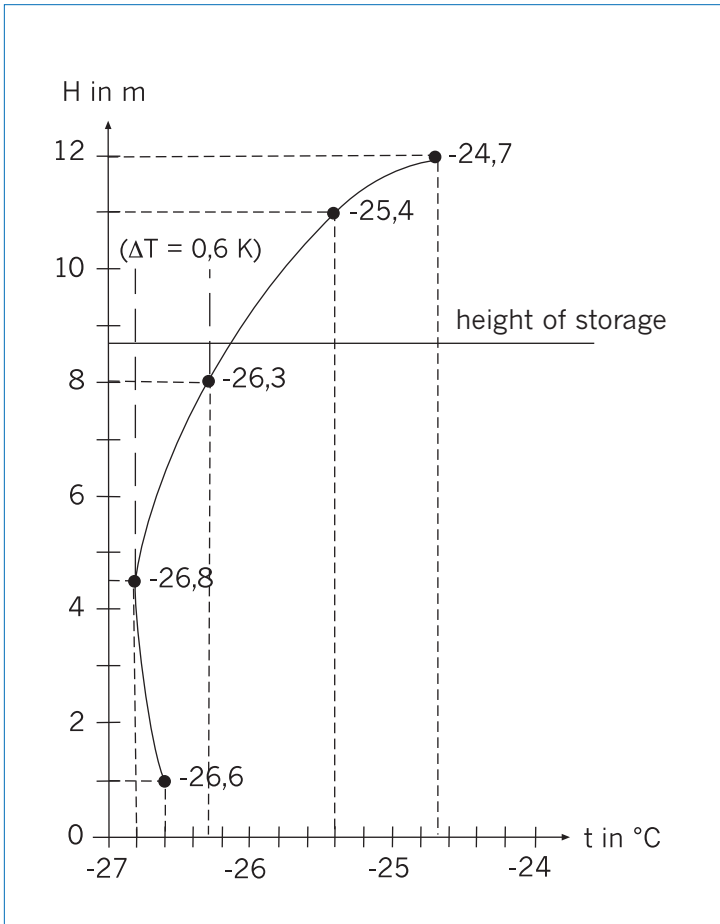
Air currents are generated by forced ventilation and thermal. The cold air is blown downward at a slow rate. There, the air spreads and forms a pool of cold air.

Transmission heat warms the air at the walls and under the ceiling. The heated air rises along the walls; a thin layer of warm air forms under the ceiling and is directly sucked into the air cooler.

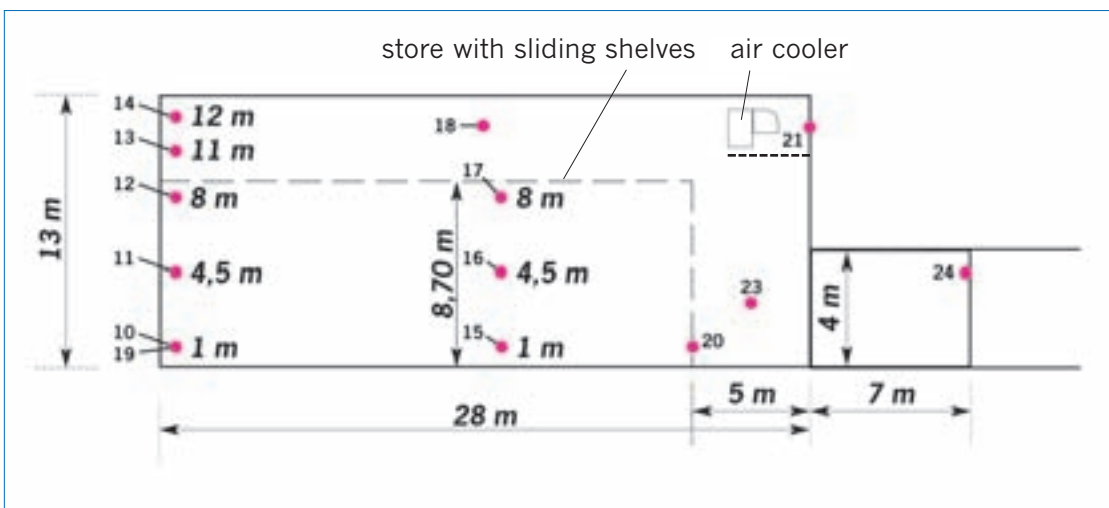
In the warmer areas of the shelves, there is additional air circulation due to thermal, and cold air flows in from the pool of cold air.

In contrast to conventional systems that force the air into the cold store by means of the air current and mix it with the compartment air, the warm air under the ceiling and the heat of the lamps are sucked into the cooler.

**Temperature stratification in deep freeze store:
Values measured over a day**



Temperature distribution in deep freeze store



vertical section drawing: positioning of sensor



Particularities	Advantages
<i>no air ducts are needed</i>	<i>lower investment costs</i>
<i>great stack heights of pallets</i>	<i>good use of available space</i>
<i>fans without external pressure</i>	<i>lower operating costs</i>
<i>fans without extreme air throw</i>	<i>lower operating costs</i>
<i>fans with low rotational speed</i>	<i>low-noise unit</i>
<i>air distribution by means of pool of cold air</i>	<i>good temperature distribution even in rooms with difficult conditions</i>
<i>air movement through thermal</i>	<i>optimal air flow in stores with sliding shelves</i>

Attention:
<i>draughts below the air cooler</i>
<i>service platform required</i>

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