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HYDROLOOP SOLUTION

Advanced plug-in liquid cooled refrigeration solution

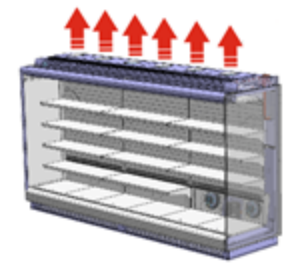
ABOUT HYDROLOOP SOLUTION

Hydroloop system is a cost-effective solution for stores, which allows connecting the plug-in refrigeration equipment to glycol-cooled system in which excess condensation heat is removed through liquid pipes to the exterior of a building or used for store and water heating.

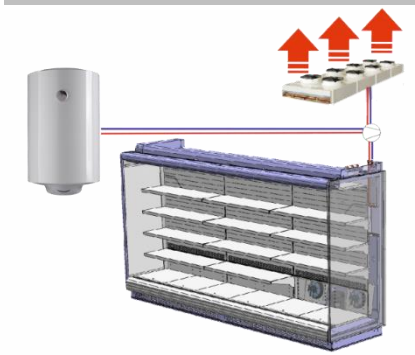
Solution can be connected to various refrigeration units - Freor multidecks, semi verticals, serve-over counters, freezer cabinets and also cold rooms.

ADVANTAGES OF THE SYSTEM:

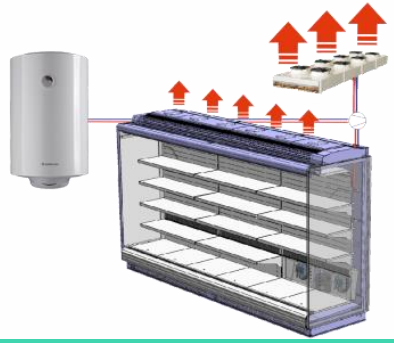
- **Easy installation & maintenance** - factory integrated refrigeration components and pipes for connecting heat removal cycle. Simple to install and maintain glycol loop system.
- **Environmentally-friendly** – significantly reduced refrigerant load per unit, ecological propylene glycol solution is used for heat removal. Natural refrigerant propane R290 can be chosen (with the GWP=3, compared to 3922 in case of HFC R404A).
- **Flexibility** - easy to rearrange the layout of sales area.



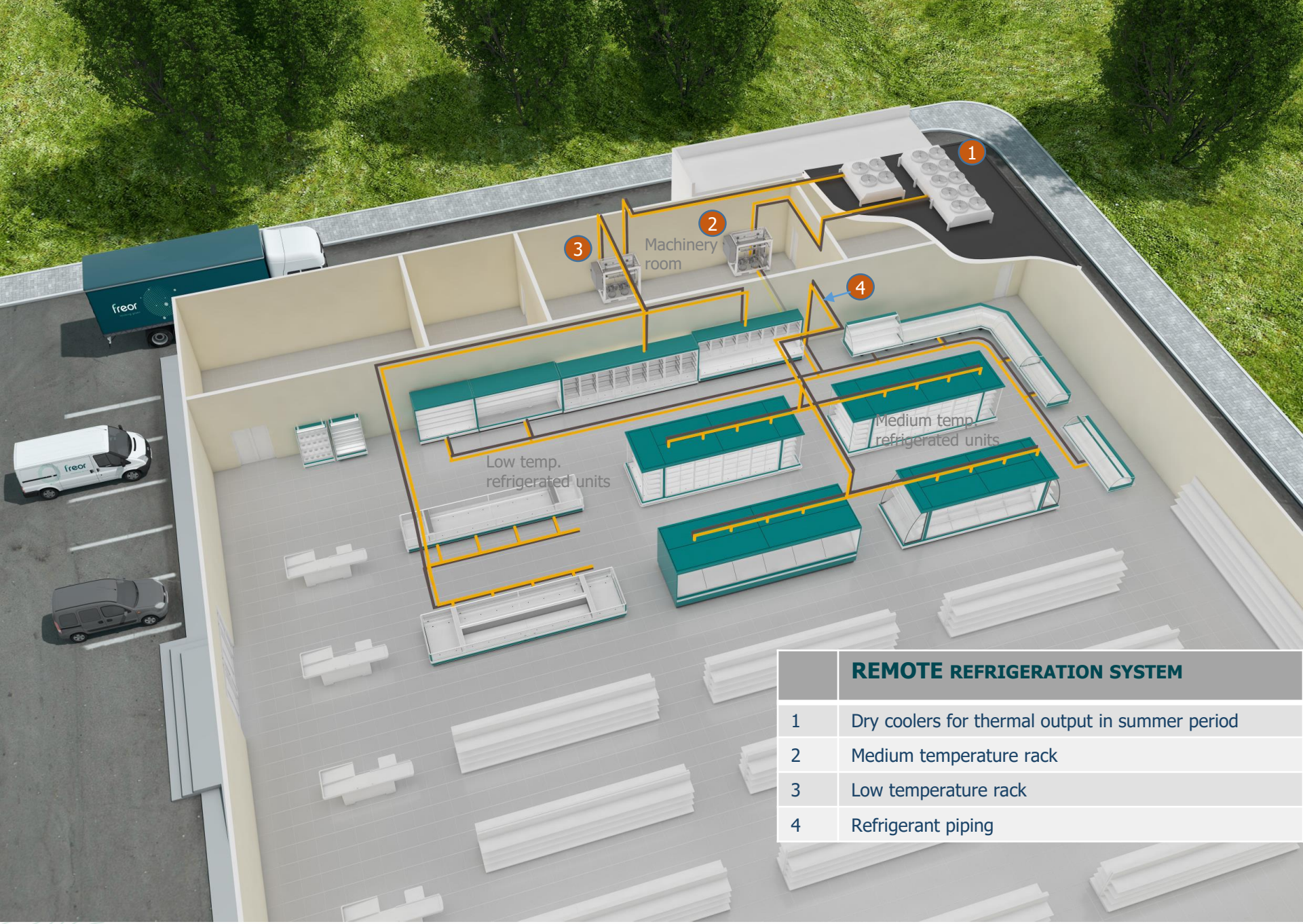
STAND ALONE



HYDROLOOP GLYCOL



HYDROLOOP HYBRID



	REMOTE REFRIGERATION SYSTEM
1	Dry coolers for thermal output in summer period
2	Medium temperature rack
3	Low temperature rack
4	Refrigerant piping

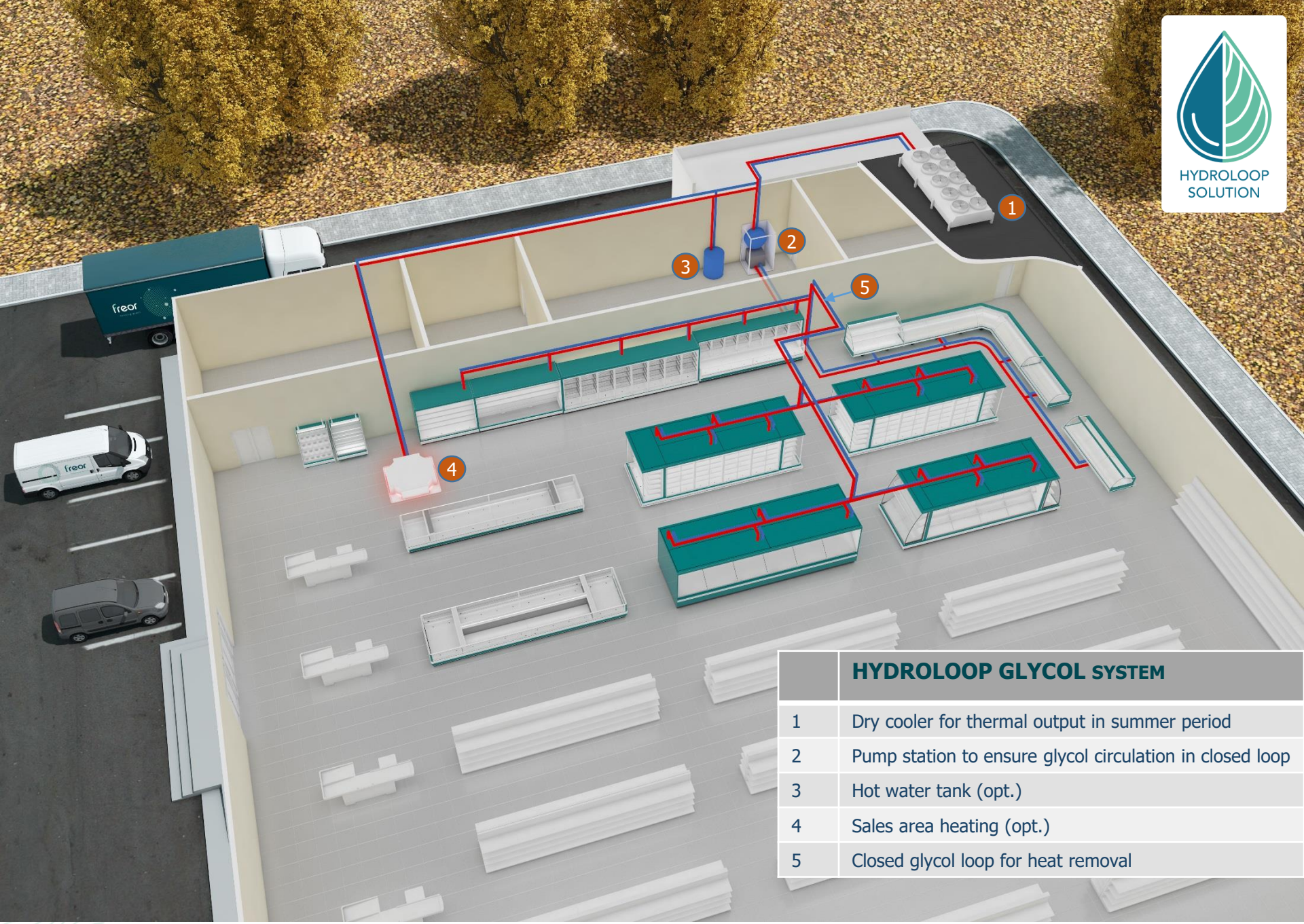
TRADITIONAL REMOTE SUPERMARKET REFRIGERATION SYSTEM

REMOTE SUPERMARKET REFRIGERATION SYSTEM

Remote supermarket refrigeration system operate with racks of multiple compressors and other components installed in the machinery room, that are connected to a remote condenser and linked to multiple refrigeration display cases in the sales area through a refrigerant piping network.

Major disadvantages:

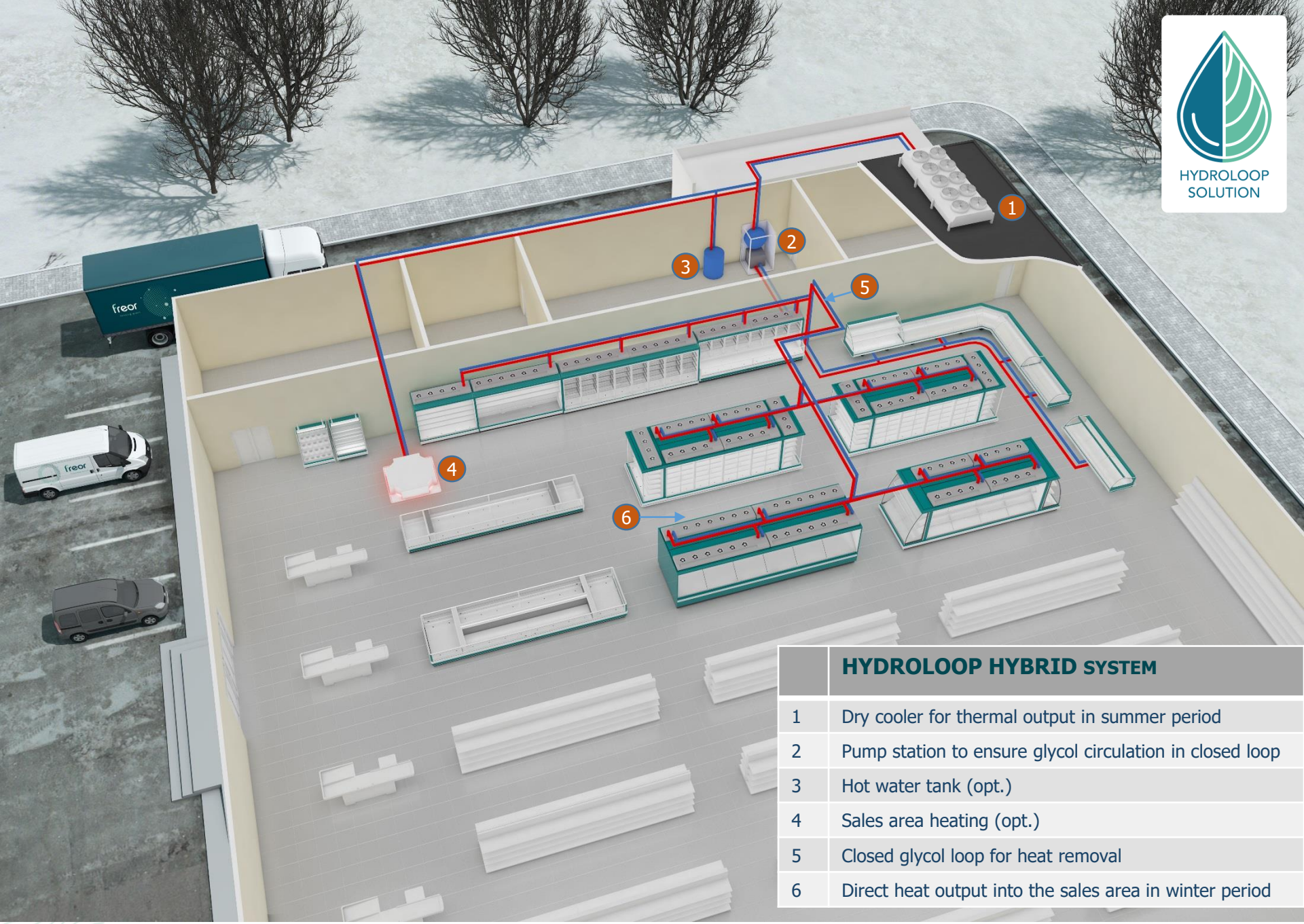
- Large amount of piping
- Big load of refrigerant needed
- A risk of losses of large amounts of refrigerant gas, especially when the equipment is aging
- Costly maintenance
- Additional machinery room needed for compressor rack units
- Not flexible, piping to all cabinets
- Bigger cost in the long run
- F-gas regulation is banning applications with high GWP refrigerants



HYDROLOOP SOLUTION

	HYDROLOOP GLYCOL SYSTEM
1	Dry cooler for thermal output in summer period
2	Pump station to ensure glycol circulation in closed loop
3	Hot water tank (opt.)
4	Sales area heating (opt.)
5	Closed glycol loop for heat removal

HYDROLOOP GLYCOL SUPERMARKET REFRIGERATION SYSTEM



HYDROLOOP SOLUTION

	HYDROLOOP HYBRID SYSTEM
1	Dry cooler for thermal output in summer period
2	Pump station to ensure glycol circulation in closed loop
3	Hot water tank (opt.)
4	Sales area heating (opt.)
5	Closed glycol loop for heat removal
6	Direct heat output into the sales area in winter period

HYDROLOOP HYBRID SUPERMARKET REFRIGERATION SYSTEM

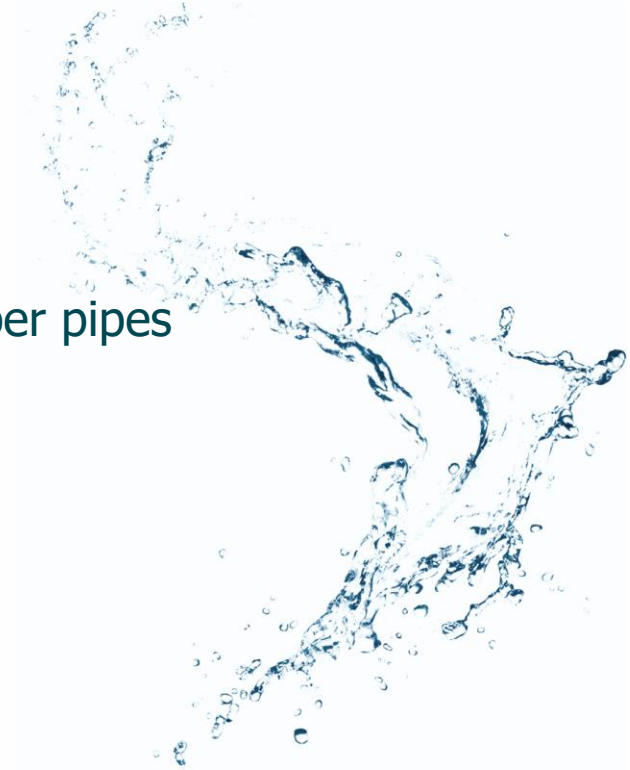
HYDROLOOP REFRIGERATION SYSTEM

HYDROLOOP SOLUTION

HYDROLOOP system is the energy efficient alternative to traditional centralized supermarket refrigeration. One loop only for both medium and low temperature display cases.

Major advantages:

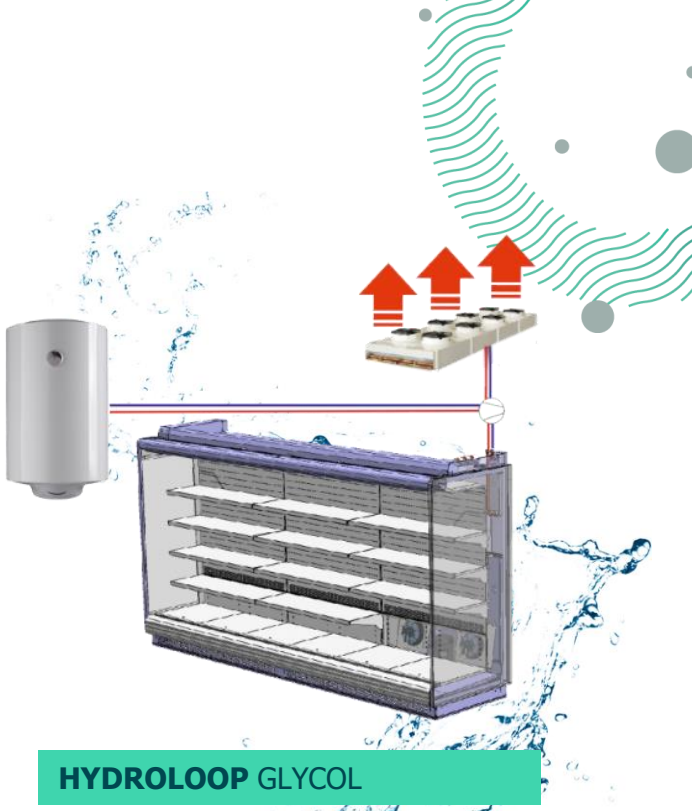
- Simple and energy efficient
- Friendly to the environment
- Lower installation and maintenance costs (copper pipes relaced with hydraulic ones)
- Faster store set-up
- Lower power requirement and operating costs
- Low refrigerant charge per unit
- Reduced CO_2 emission
- Easy components replacement
- Easy integration with heat reclaim systems



HYDROLOOP SOLUTION MODES

Allows removal of heat from the store through environmentally-friendly glycol line in summer and additional use of the heat for warming up the store and water in winter. Your chosen heating system can be additionally installed.

Advantages:
- No heat discharge into the store area
- Very small quantity of refrigerant
- Easy installation – saving costs
- No additional room height is needed to secure air flow
- Emitted heat can be used for shop heating
- Easy to integrate with various heating systems



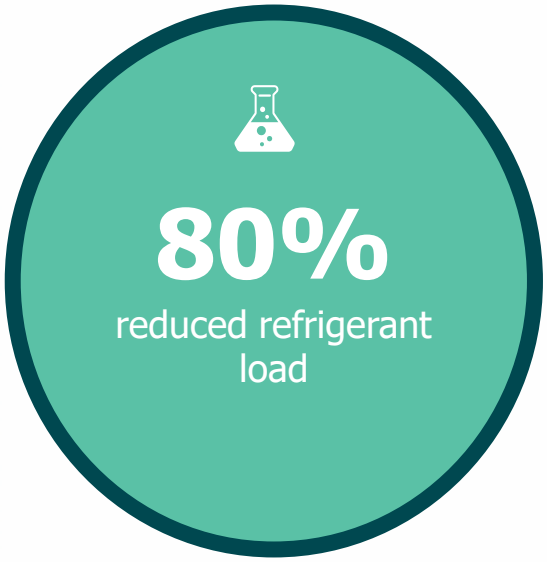
HYDROLOOP GLYCOL

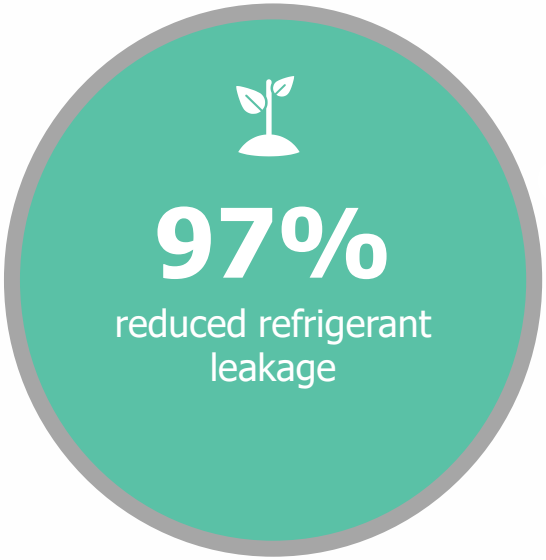
Allows combining two different heat removal systems with the possibility to switch between the regimes, which guarantee easy use of excess heat for store needs. Heat is either emitted directly into the store area via air condenser mounted in the equipment (in winter) or removed via glycol line to the outside (in summer).

Advantages:
- Direct warm air supply to the store area in winter
- Easy to install
- Easy to integrate with various heating systems
- Reliable operation – in case of fault in water circulation, heat is removed via air condenser on the top of the equipment

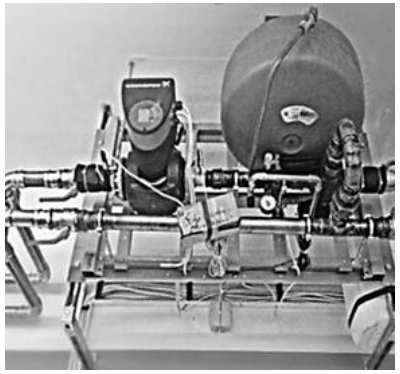
HYDROLOOP HYBRID

BENEFITS OF HYDROLOOP VS CENTRALIZED SYSTEM





Pump Stations & hydro-aggregates



Hydro-aggregates, produced by FREOR, are fitted with compressors and plate heat exchangers, and are intended to maintain the temperatures of products stored at cold rooms at 0°C – +2°C, and LT -22°C – 25°C. They are connected to the same Hydroloop system.

Pump stations, produced by FREOR, ensure glycol circulation in Hydroloop System.

Designed to respond to the requirements of small stores space saving, both devices can be mounted without the case at a convenient location in store.

Components of heat exchange system

Controllers

Pump stations

Dry cooler

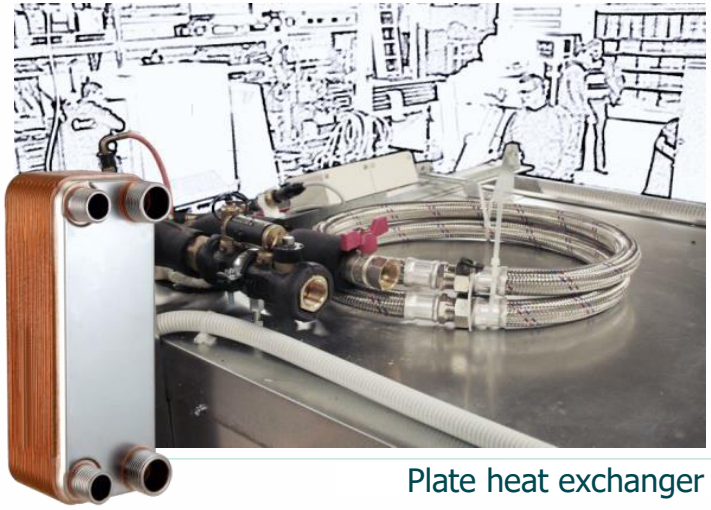
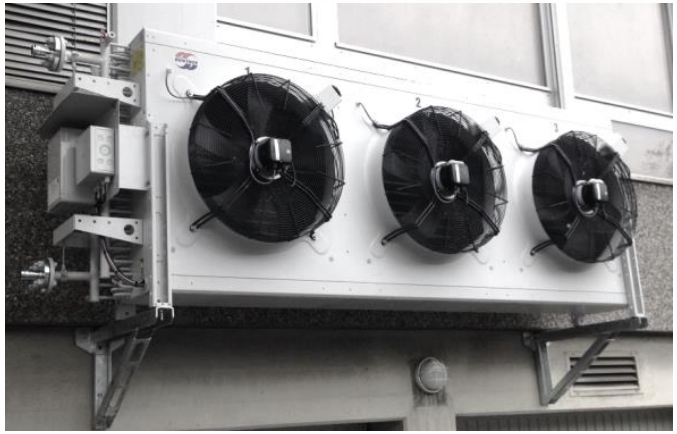


Plate heat exchanger



Dry cooler

Piping

Pipe joint

Pipe fittings

REFERENCES HYDROLOOP SYSTEM

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BENEFITS OF PLUG-IN MULTIDECK vs REMOTE

Plug in refrigeration equipment has all the components involved in refrigeration cycle, including compressor, condenser, thermoregulation valve and evaporator, fitted inside the refrigeration system, thus creating lots of advantages.

✓ **More than 30% energy saving**

✓ **Reduced costs**

- The need for special refrigeration room and long copper pipelines is eliminated, thus guaranteeing up to 70% cheaper system installation and ensuring easy care.

✓ **Reduced Refrigerant Load**

- Only 2,5kg for 2,5m and 3 kg for 3,75m multideck unit.

✓ **Extremely Fast Installation**

- Water pipes already mounted, no building works in sales area

✓ **Flexibility**

- System can be easily relocated

✓ **Environmentally –friendly**

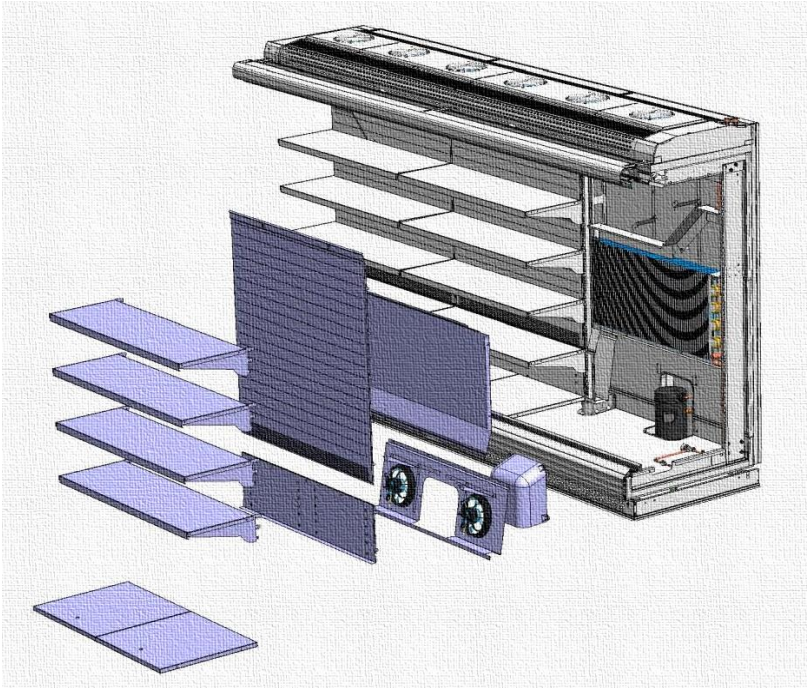
- Hermetic system and f-gas leakage close to zero allow to minimize the negative impact on the environment.
- Natural refrigerant R290 operated equipment available.

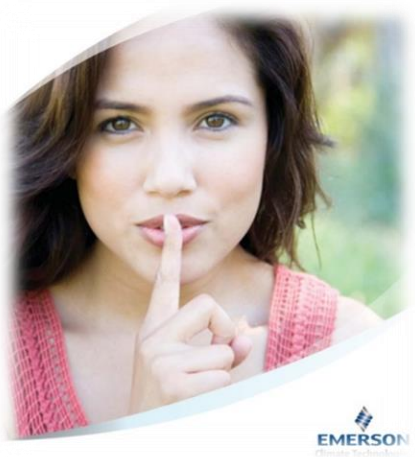
✓ **Optional Direct Recuperation**

- Heat sales area only when needed

✓ **Various heating systems can be added**

BENEFITS OF PLUG-IN MULTIDECK VS REMOTE





✓ **Maximum Product Safety**

- Every refrigerator operates as a separate unit, therefore failure in one piece of equipment does not affect the others, and potential loss of products is minimized.

✓ **Low level of noise**

Special features to reduce the noise:

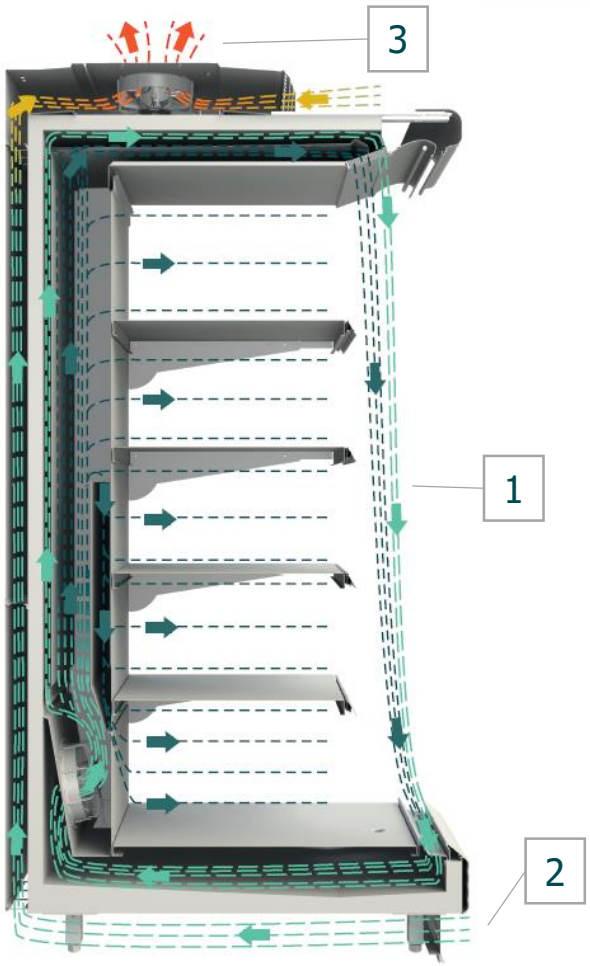
- Sound-absorbing compressor casing

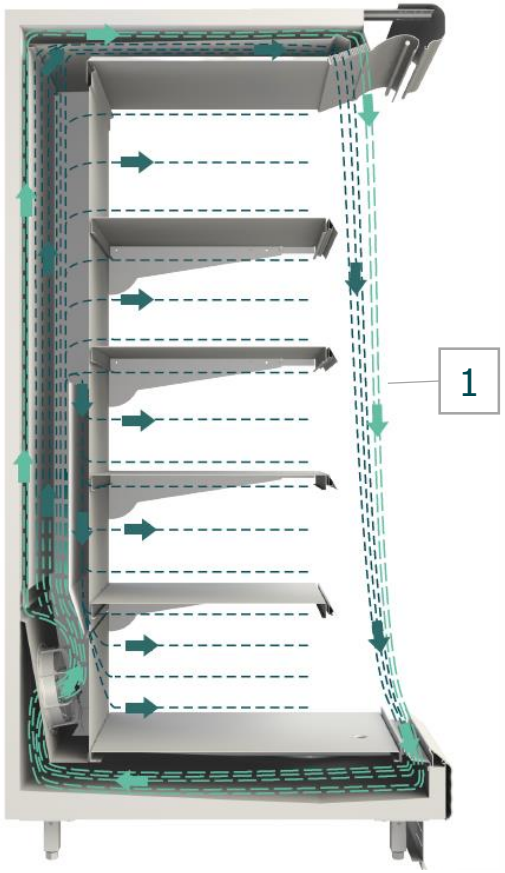
(This type of casing reduces compressor sound pressure level to 10-12 dB)

- Soft-starting compressor system
- Special low noise construction by ebmpapst fans

✓ **Easy access to refrigerating components**

PLUG IN - AIR FLOW





✓ **Lower energy costs**

Cold air accumulation in front of the units is sucked away and used for condenser cooling

✓ **Increased Sales**

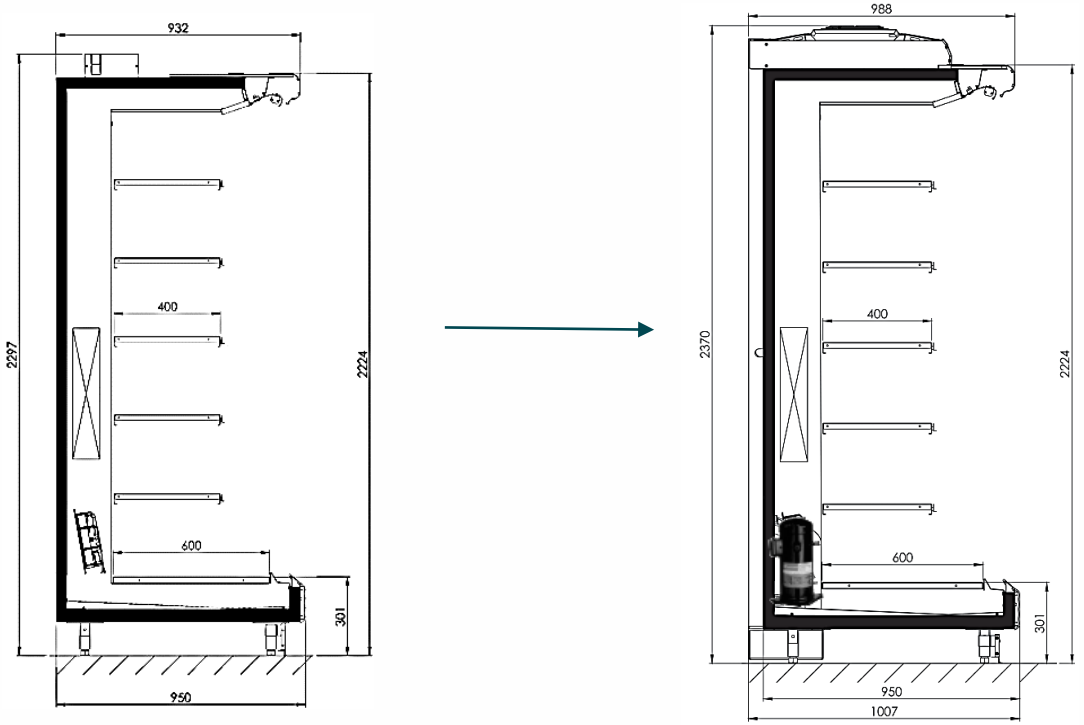
No cold air in front of multidecks due to double air curtain

1 - Double air curtain
2 - Ambient air
3 - Heat output into sales area

Versions:
STAND ALONE, HYDROLOOP HYBRID

Version:
HYDROLOOP GLYCOL

JUPITER PLUG IN display area



Jupiter remote

Jupiter plug-in

Display area of multideck Jupiter plug-in is exactly the **same as** standard Jupiter's remote.

Jupiter plug-in is available in 2 heights, 4 depths and 4 lengths: 1250 mm, 1875 mm, 2500 mm, 3750 mm

How to contact us?

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