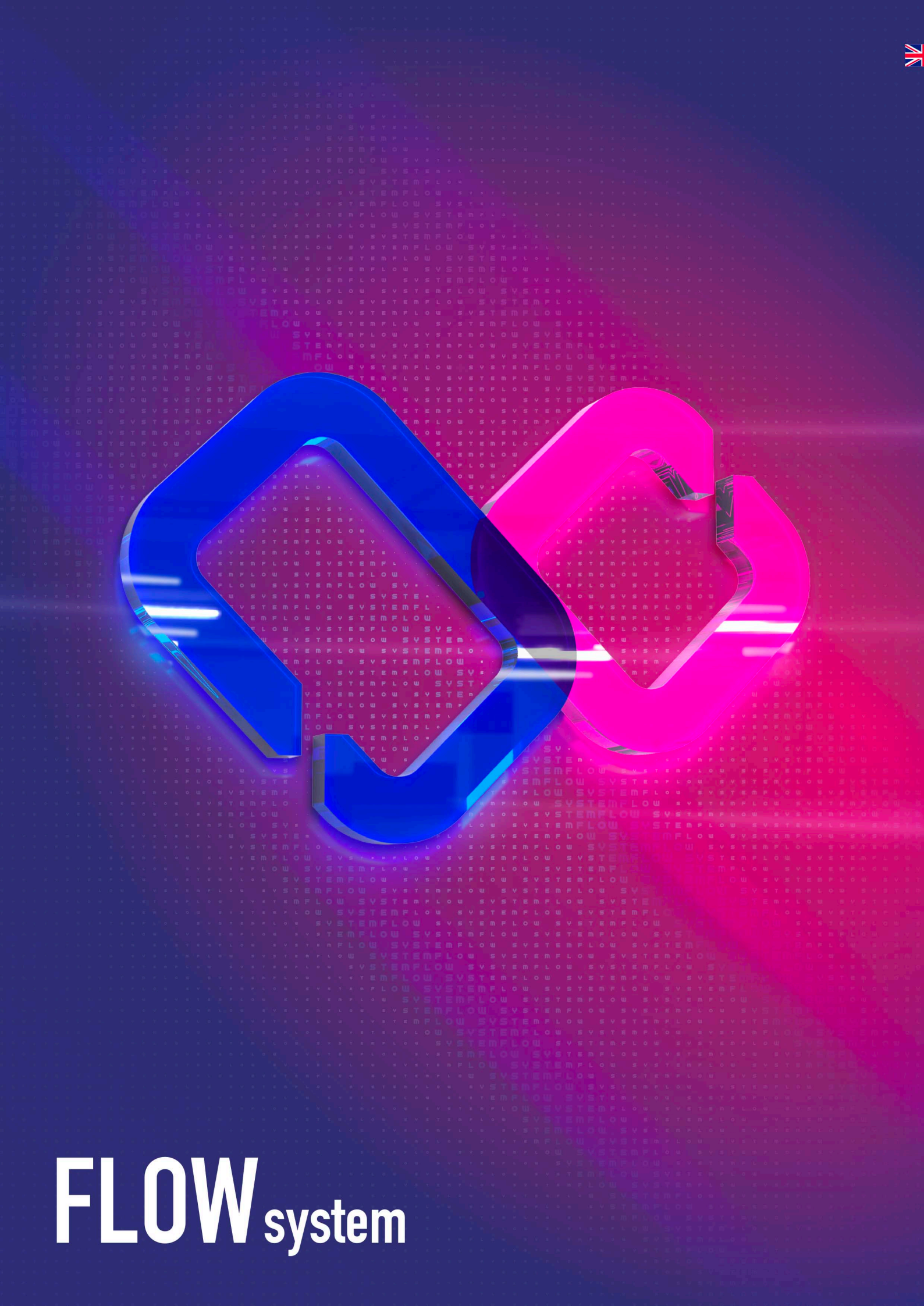
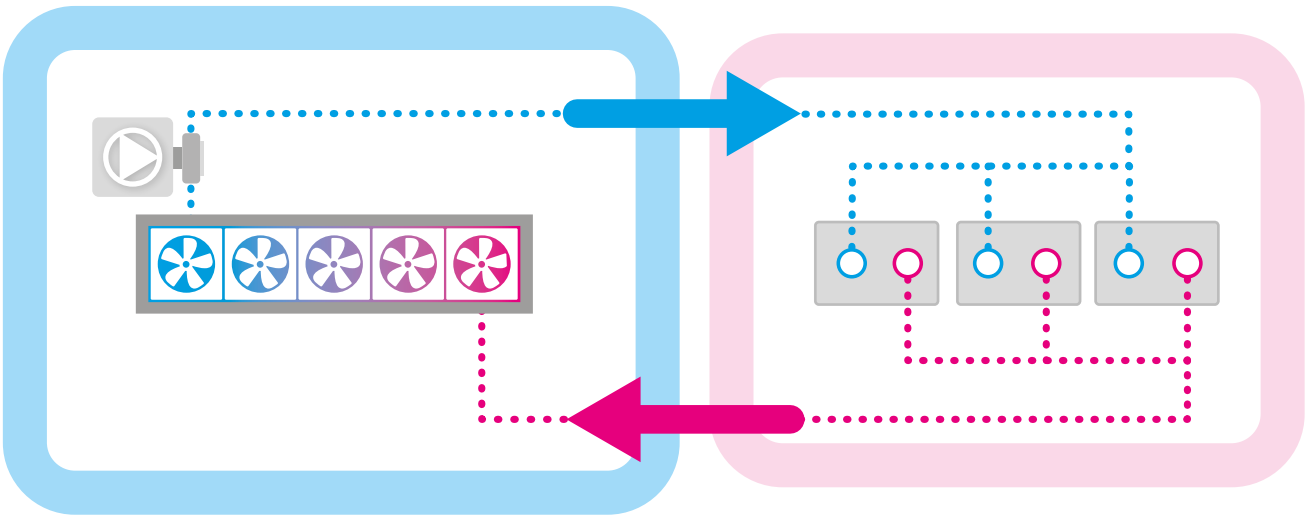

FLOW system

FLOWsystem is a water loop solution developed by JBG-2 that allows you to easily manage the heat generated by refrigeration equipment.

The system effectively transfers heat from the sales area to the selected location and allows you to manage it further.

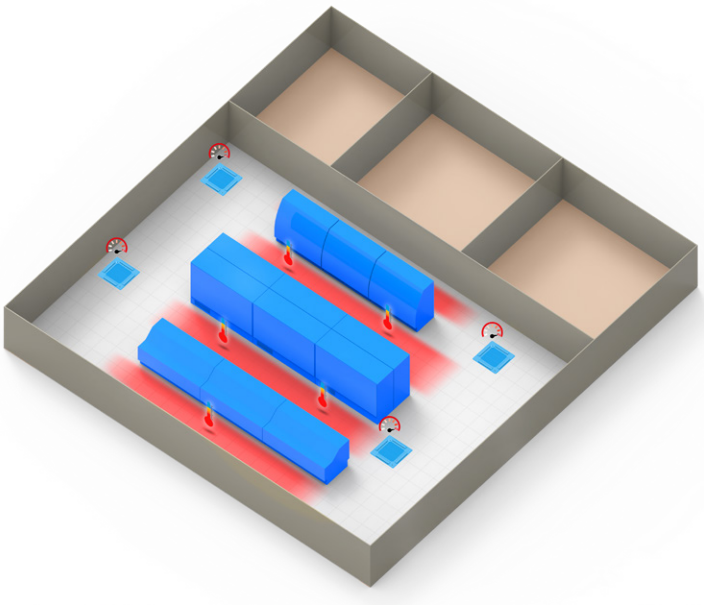
FLOWsystem is an easy, economic and ecologic way to achieve immediate savings in your retail store operational costs, regardless of whether it operates independently or is integrated with other installations.



OUTSIDE **SHOPING AREA**

Shop with plug-in appliances = heat emission

Plug-in appliances emit heat to the interior of the retail store, which increases the demand for air conditioning. This applies to approximately 180 days each year.



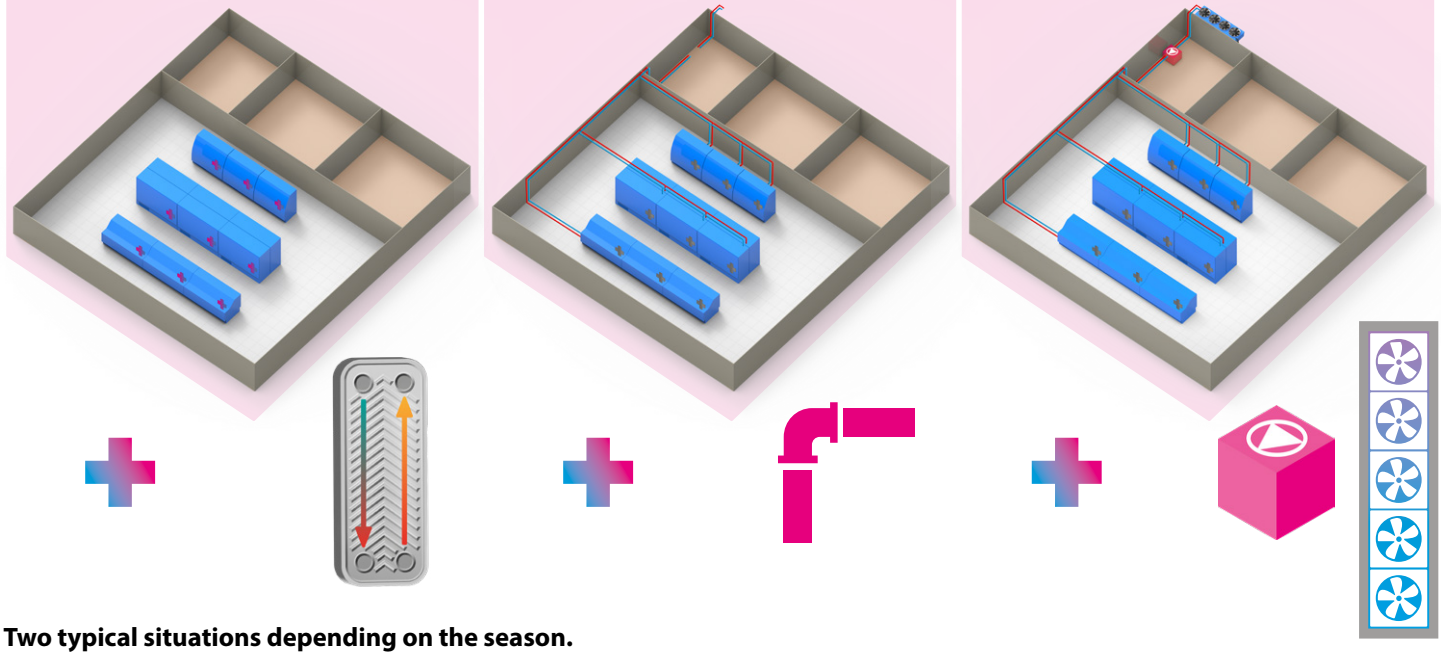
Example of the store with plug-in devices.

This applies to approximately 180 days each year.

Better heat management.

The ideal solution – FLOWsystem in three steps.

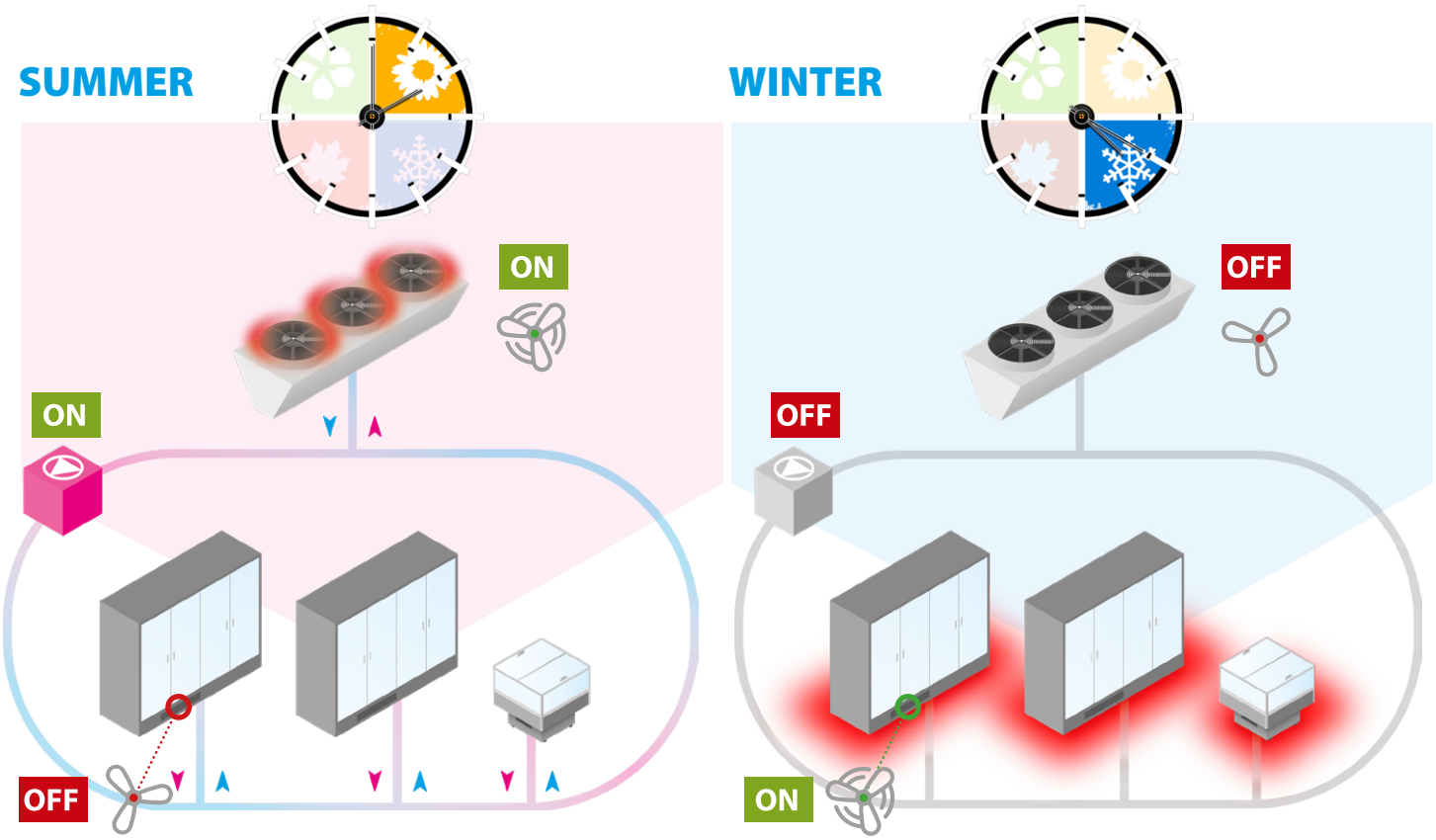
1	2	3
Device adaptation to FLOWsystem.	Piping execution to which we connect all refrigeration equipment.	JBG-2 pumping module and a drycooler installation.



Two typical situations depending on the season.

Refrigeration units transfer heat to the water installation, which is then released to the environment through the drycooler.

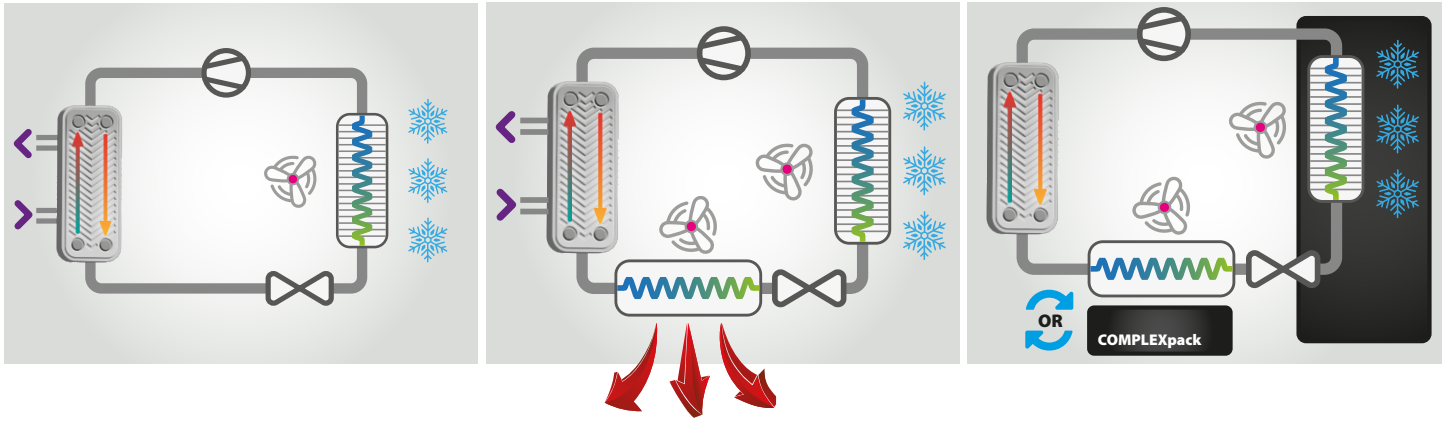
Heat emitted from refrigeration equipment can be used to support store heating.



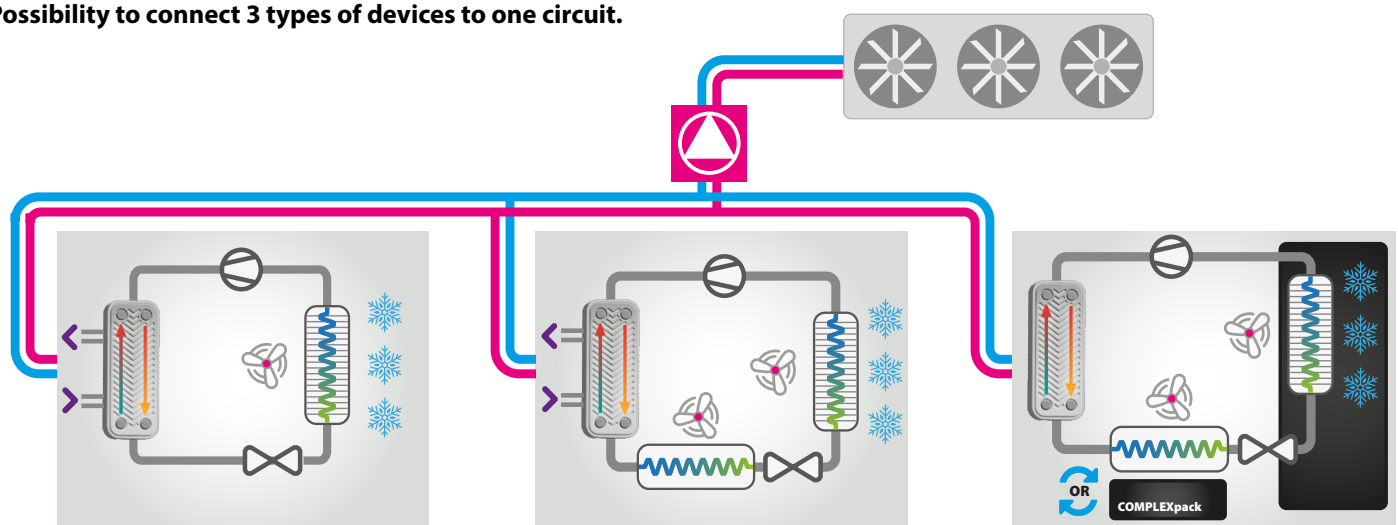
Characteristics

The project titled "FLOWsystem" is a solution which involves water-loop installations, to which you can connect appliances equipped with aggregate. Plug-in refrigeration appliances generate heat, which is usually emitted to the inside of the store. The simplest solution to this particular problem is to connect these devices to a water-loop installation – FLOWsystem. We offer 2 options of plug-in device's adaptation and a Flow pack solution for large Remote appliance with a large sales volume.

1	2	3
Semi plug-in – appliance needs to be connected to the previously installed water loop in the store prior to proper commissioning. Correct work of the display cabinet depends on the water loop. It is not a standard -plug & play device. Modification consists of replacing the standard condenser (air-cooled) with a plate-condenser (water or a glycol solution cooled). Appliance does not increase its overall size.	Plug-in hybrid – appliance has 2 heat dissipation possibilities from the cooling unit. The appliance is fitted with both standard condenser and a water plate condenser. In such case, the appliance becomes a plug & play piece of display cabinet i.e. all that it requires for correct operation is to be plugged into a power socket. If the customer wishes to transfer the heat to the outside of the store using a water loop, such option is available. For technical reasons, that is also the safest and the most recommended solution with regards to protection of appliance and range of possibilities for managing heat generated by refrigeration display cabinet. Device does not increase its overall size. Water installation shall be prepared at the project stage.	Flow pack/Complex pack – this is a modification of a typical remote display cabinet to a semi plug-in appliance or to in the hybrid version. In the case of the semi plug-in it is necessary to carry out the water loop installation in the store and connecting the device before switching it on. Modification consists of adding a cooling unit on top of the remote display cabinet. Appliance's height increases by the size of the cooling unit.



Possibility to connect 3 types of devices to one circuit.



1	2	3

Most important benefits.

	Better heat management in the store • negligible instore heat emission during summer • Support of the store's heating system in winter and during transitional periods
	Devices work using natural refrigerants • R290 as a primary refrigerant
	Small amount of refrigerant • Up to 90% less compared to traditional remote system • Inculding 90% smaller losses over 10 year period
CONST	Constant, optimal condensing level = Constant optimal cooling capacity of devices
	Less frequent of cleaning the condensers • In case of use non-lamellar condensers or semi-plug-ins

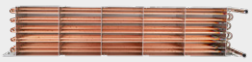
Aadditional advantage.

	Reduced expenditure on water loops compared to copper piping system for remote device
	Possibility of integration with other heating systems as their support
	The system's characteristics included tidiness of installation • made of heat-bonded, glued and clamped PP, PVC, steel elements • without soldering, welding
§	Compliance with the F-GAS regulations • no operator registration required = no protocols*

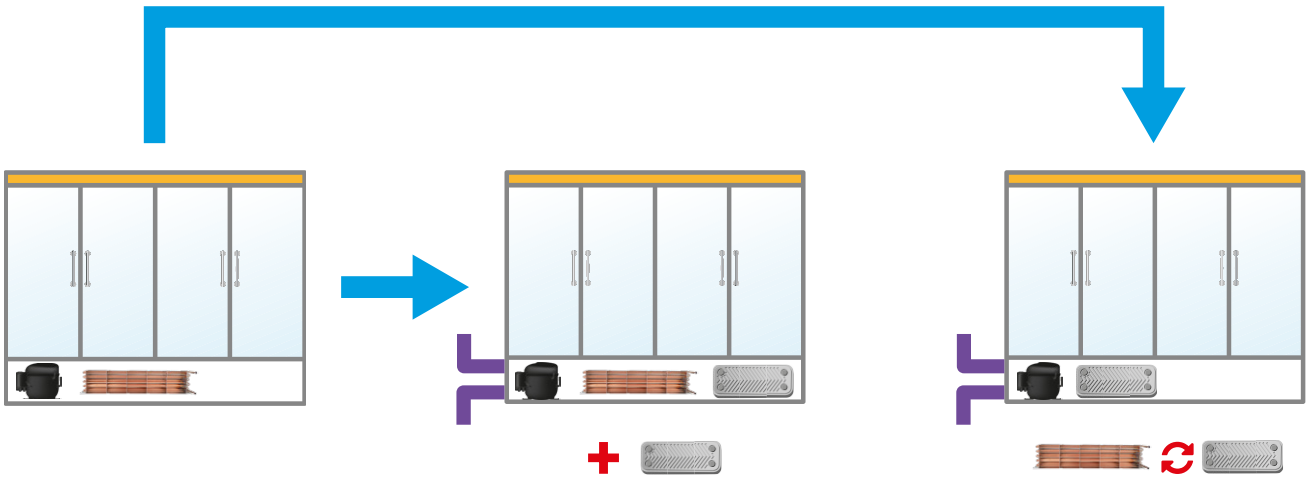
Execution standard and options.

Standard:

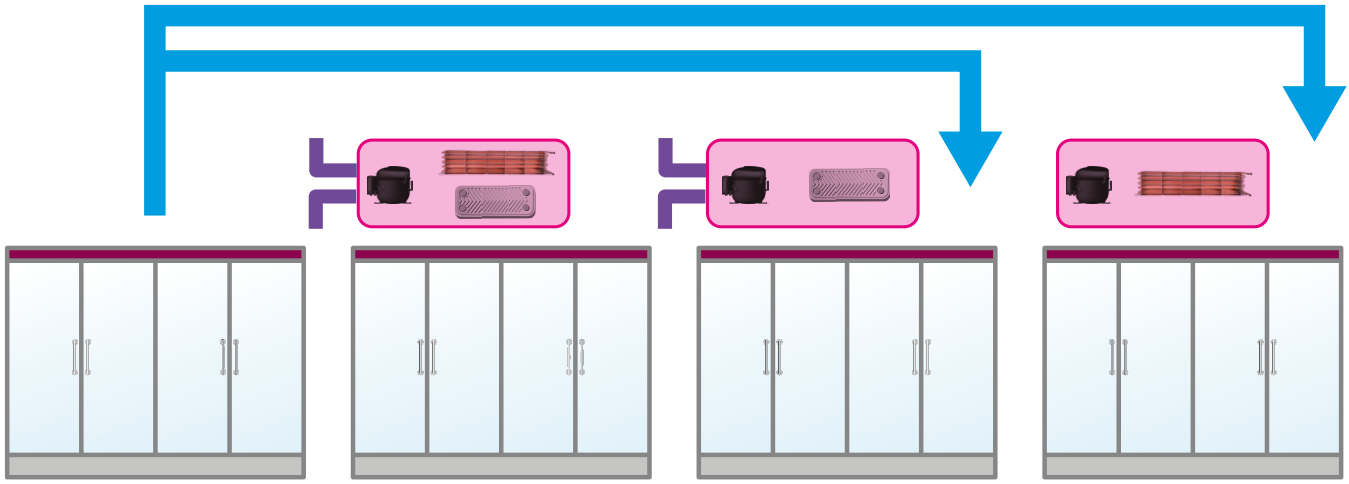
1	2	3
semi plug-in replacement of the (air) condenser with plate heat exchanger (water-based) fitted with external threads at the exchanger	**plug-in hybryda** addition of plate heat exchanger fitted with external male threads at the exchanger	**flow pack/complex pack** addition of an extension fitted with external threads at the exchanger

	WATER	*AIR*		*OPTION*
COMMPRESSOR	PLATE HEAT EXCHANGER	HEAT EXCHANGER	COMPLEX PACK – ZDHE	FLOWsystem CONNECTIONS
				

PLUG-IN



REMOTE

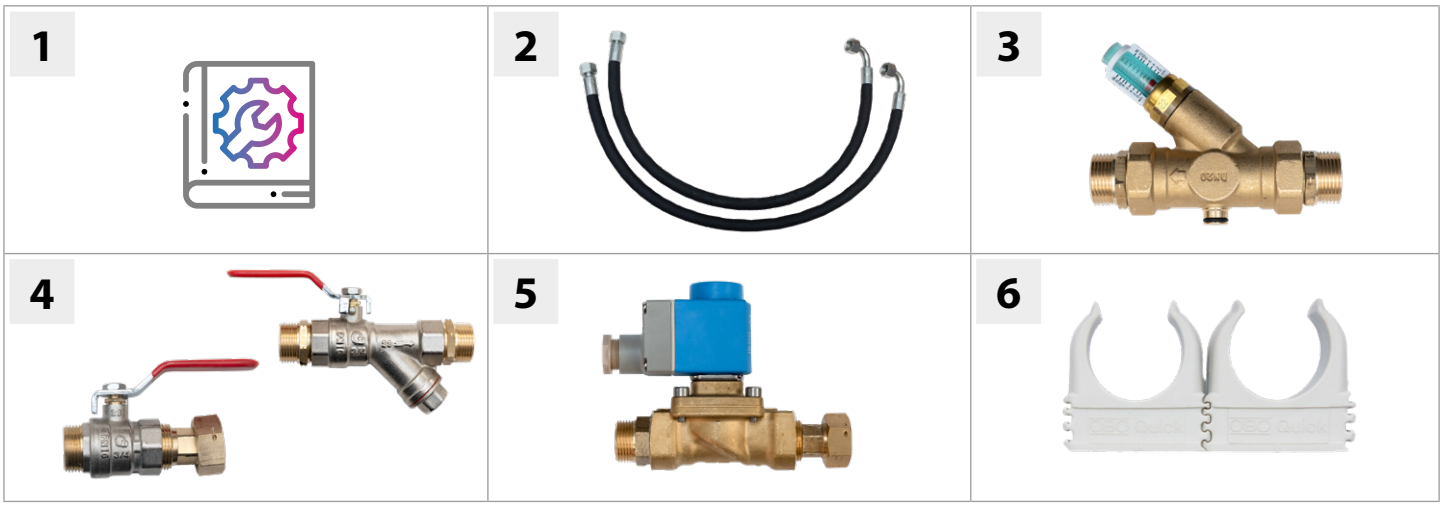


Standards and options for adapting appliance to FLOWsystem.

OPTION – possibility to purchase a ready-made adaptation set for connecting to the water system

The complete connection set includes:

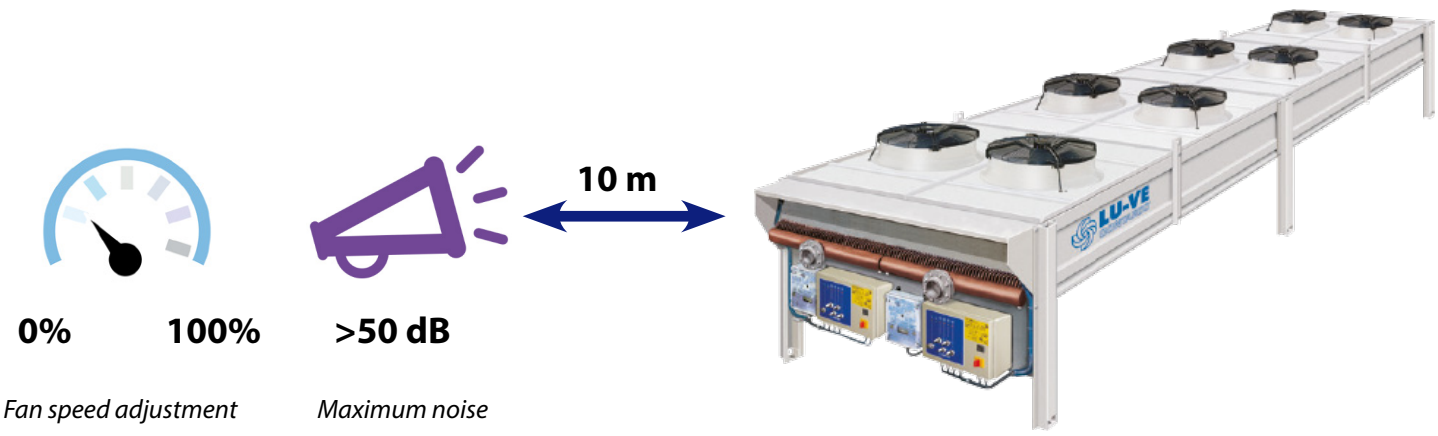
1. Instruction manual.
2. Elastic connectors with nipples.
3. Manual balancing valve (one per module).
4. Manual ball valve with male thread (two per module, including one with diagonal strainer).
5. Two-way cut-off electrovalve (one per module) - in case of appliances where defrosting is done by hot gas.
6. Set of pipe holders.



Drycooler

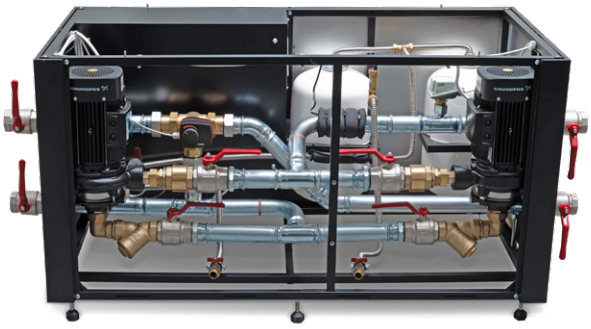
Drycooler is controlled by a freely programmable controller, which is included in the pump set. The speed control of the fans is carried out proportionally ranging from 0...100%.

Based on a temperature sensor located on a pipe feeding refrigeration appliance.



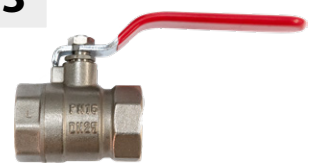
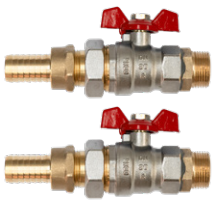
Standard 1 or 3 phase drycooler EC fans

JBG-2 pumping module.

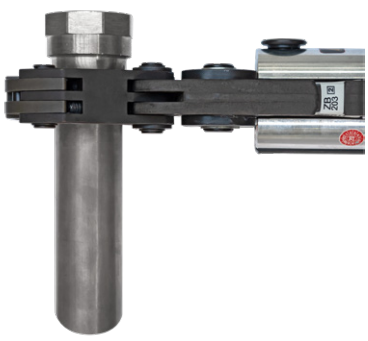


Hydraulic components:

1. Single-stage centrifugal pump(s).
2. Diagonal strainer (before each pump).
3. Manual shut-off valves (before and after each pump).
4. 3-way mixing valve with proportional actuator.
5. Flow sensor providing a feedback signal for the operation of the pumps.
6. Expansion tank 25 dm^3.
7. Filling connectors.
8. 6 bar safety valve, pressure gauge, automatic air vent.

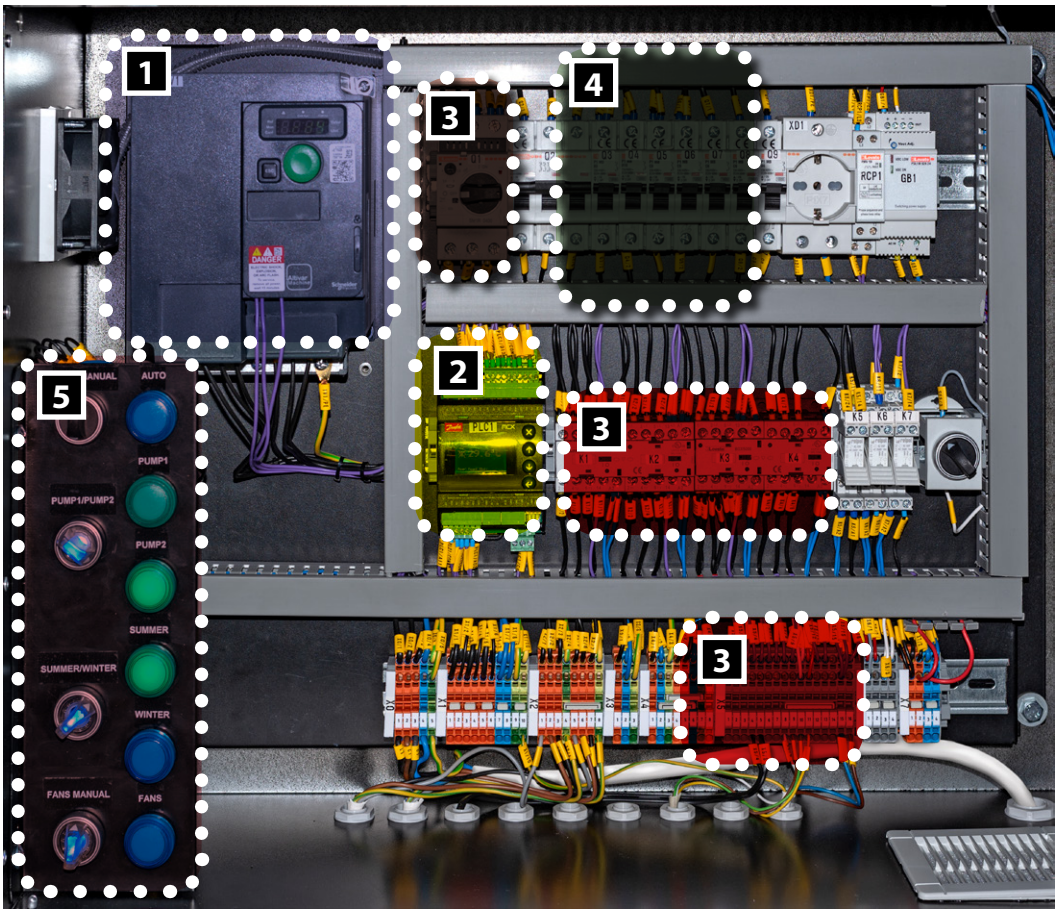
1 	2 	3 	4 
5 	6 	7 	8 

The entire set is made in one compact casing in the MAPRESS C-STAHL system.



JBG-2 pumping module.

Electricity and control:



1. Inverter for control of rotational speed of the pump.
2. Controller to control the entire system.
3. Relays, contactors, probes, sensors.
4. Overcurrent protection.
5. On/off switches, alarms.

Protection of refrigeration systems in display cabinet.

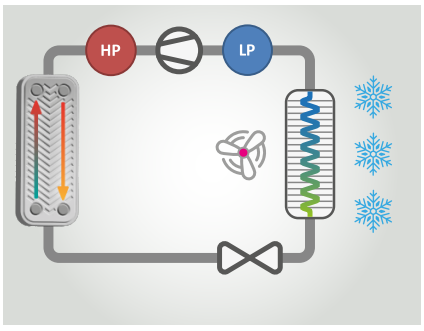
FC HP LP

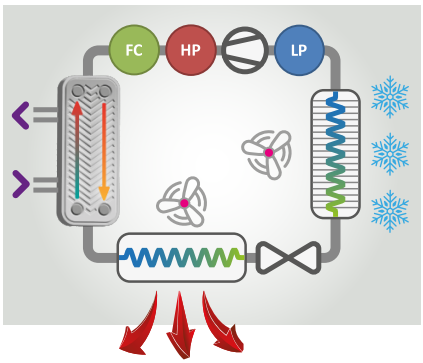
semi plug-in
low and high pressure protection (LP and HP)* as a standard

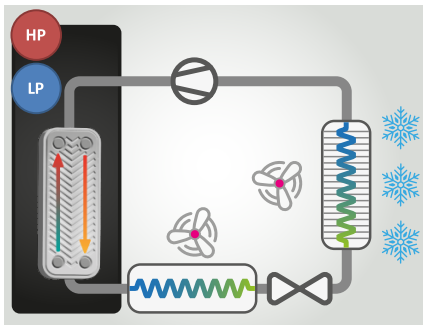
plug-in hybryda
low and high pressure protection (LP and HP)* and condenser fan control (FC) as a standard

flow pack/complex pack
low and high pressure protection (LP and HP)* as a standard

Low and high-pressure protection







**not in all equipment*