



Refra[®]
www.refra.eu

RETAIL

SOLUTIONS

ABOUT COMPANY

Explore The Possibilities

JSC "Refra" is one of the leading companies in the field of manufacturing refrigeration equipment. The long-term work experience, an official representative of the leading world producers of compressors and other spare parts of refrigeration equipment, the widest range of products, an individual approach to each client and professionalism – those advantages enabled our company to obtain wide publicity in refrigeration market segment.

Our factory has several product ranges:



REFRIGERATION



AIR
CONDITIONING



AIR HEAT
EXCHANGERS



COLD ROOM
DOORS



HORECA



SHOPPING
EQUIPMENT



BUFFER TANKS &
HEAT RECOVERY
SYSTEMS

200

Professional
Employees

20+

Years of
Experieny

14M

Last Year Money
Turnover

150000

Production Area
of Our Factories (m²)

Retail Solutions

When we think about today's and future solution in retail energetic system, we see energetically effective solution as the main goal. Also all engineering solutions must be safe to use, cost-effective, reliable and environmentally friendly.

We understand that every retail business manager wants to get these solutions early on, when the project is just being sketched. Therefore it is necessary to make right solutions not only in designing the building, but also in engineering energetic systems like cooling, heating, ventilation and air conditioning. The only way to meet the desired results is to combine all separate units to one system and try to avoid energy waste.

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 - 8 Retail Solutions for Hypermarkets
 - 10 Shopping Equipment
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RETAIL

SOLUTION

RETAIL SOLUTIONS FOR SHOPS

Refrigerated units

Refrigerated cabinets, showcases and fish tables

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Dry-cooler + Heat pump + Pump station

Heat energy rejection system with incorporated heat pump can save a lot for retail market. With heat pump you can recover all energy during cold period, and dry-cooler will help you to stay cool in summer time, when you must reject energy from cooling system

Cold rooms + Evaporators

High quality custom sized doors for refrigerated, frozen cold rooms together with ceiling mounted evaporators for various temperatures

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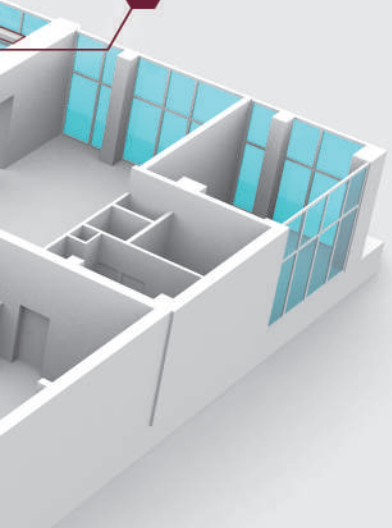
Retail solutions for shops

Minimarkets or small convenience stores usually must meet up to the special requirements. That means they need special solutions. Usually these minimarkets face problems due to space, equipment servicing, noise, safety and many other situations that require additional costs and non-standard solutions. That is why, it is crucial for them to get the equipment that fits their needs individually. There are some modern solutions that can be easily integrated in the engineering systems of such small stores and minimarkets.

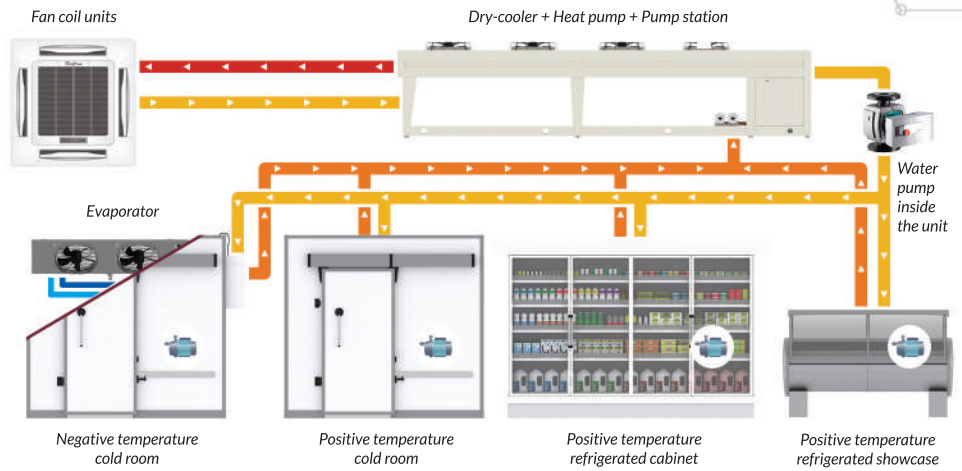


Fan coil units

Fancoil units are used to transfer heating or cooling energy to the market

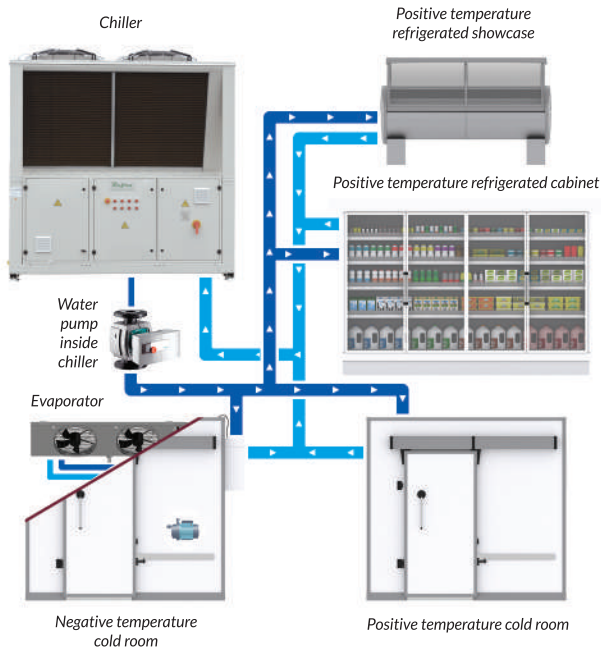


WATERLOOP



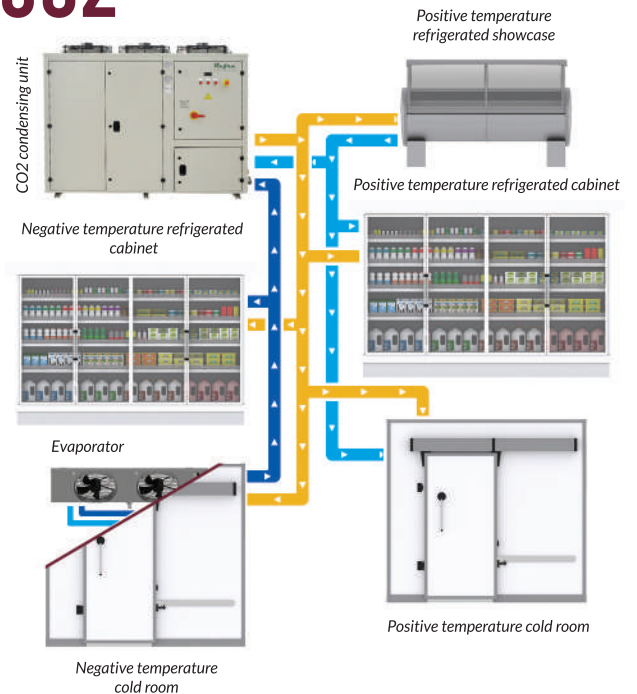
The main principle of such system is using cabinets and cold rooms with installed refrigeration system (compressors) and cooling them with dry cooler. It is known, that "Waterloop" systems require dry coolers and pumps to operate, but it is often complicated to install them in a system. Because of this, Refra designed a combined unit of a dry cooler with pre-installed pumps that lets the installers mount the equipment fast. It is possible to have a heat pump for heat recovery on the same system and the same frame if there is a need for high potential hot water. This solution gives many benefits: small refrigerant charge per cabinet or cold room; low installation cost; space saving – there is no need for compressor room; inexpensive heat recovery system; quiet operation.

CHILLER



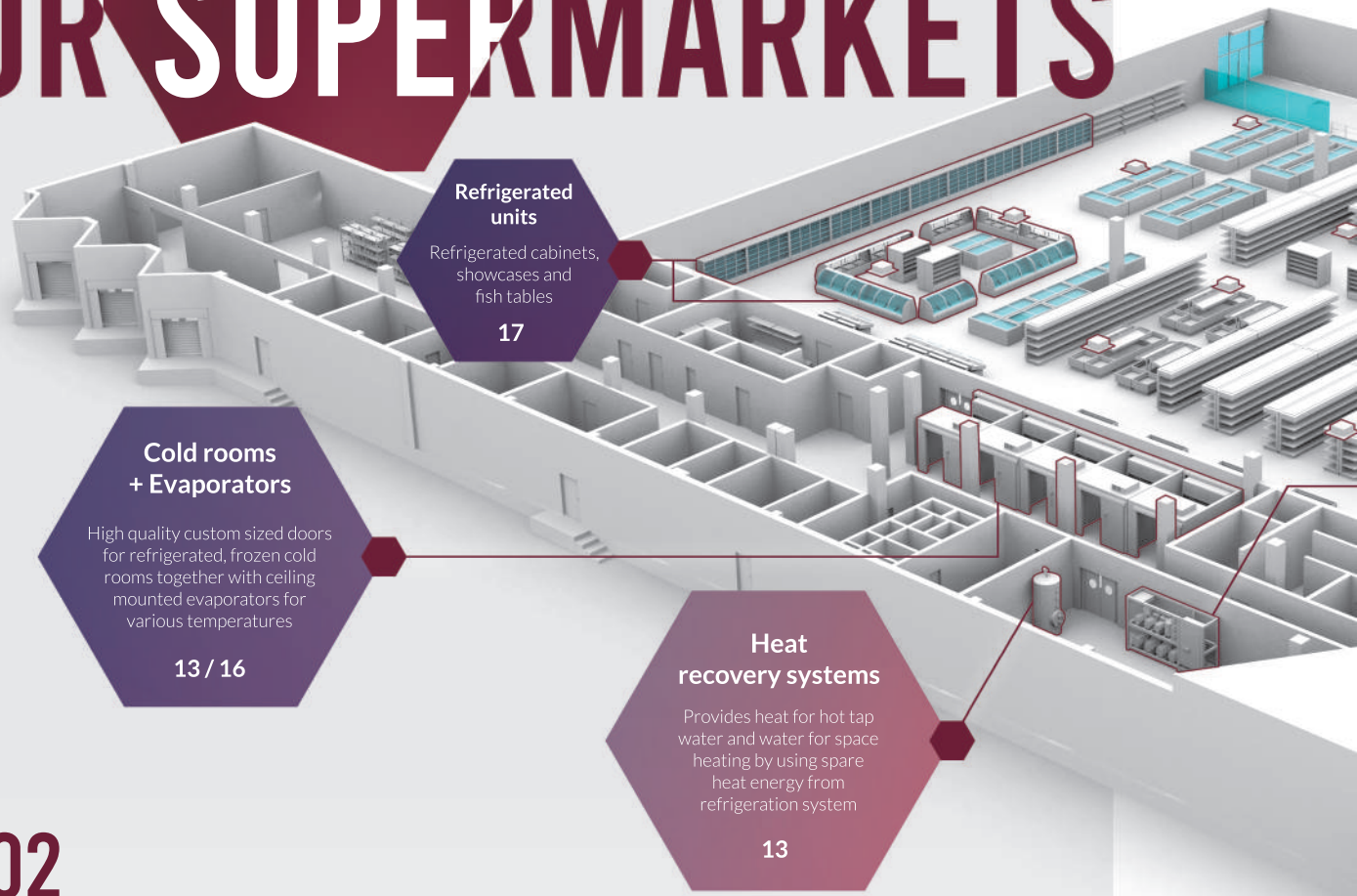
Water chillers in retail stores are mostly used as a central air conditioning option, which can be combined with air handling or fan coil units. Moreover, it can be used for middle temperature cold room cooling. This system can be supplemented with various additional options or modifications, such as heat recovery, free-cooling and reversible cycle.

CO2

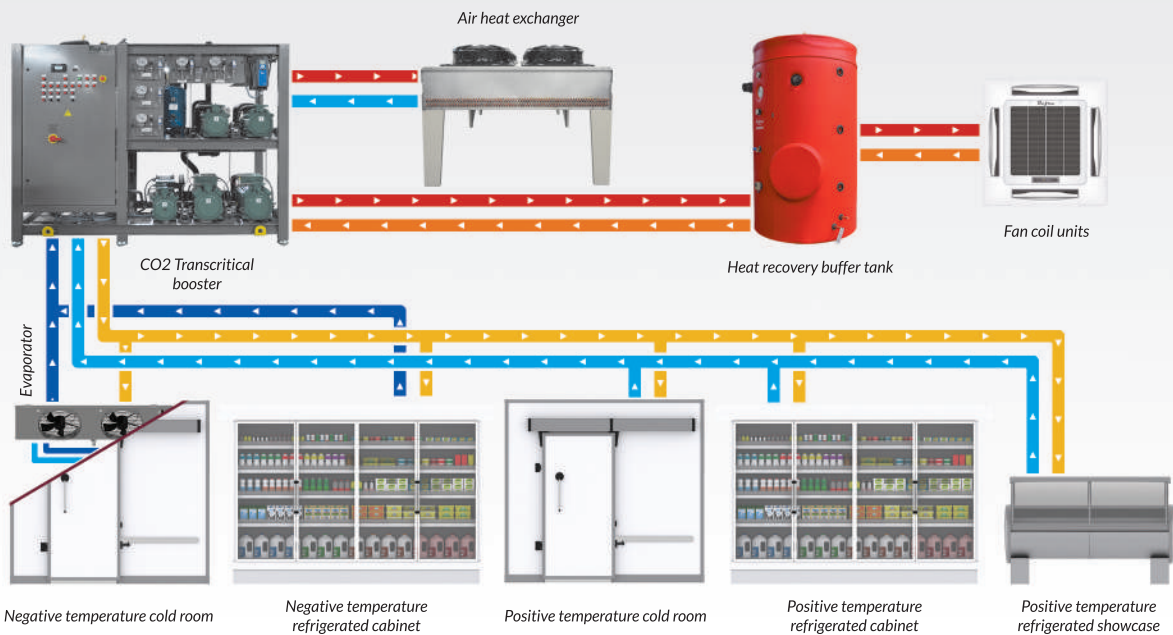


CO2 refrigeration system is a solution that can cover all refrigeration needs – both medium and low temperature. It is a perfect option for small stores and minimarkets. This is a compact condensing unit, built with plug-and-play mentality. Benefits you get with CO2 system are these: energy and cost efficiency, simple installation and easily achievable low temperature. It is also environmentally friendly because of its natural refrigerant.

RETAIL SOLUTIONS FOR SUPERMARKETS



CO2



CO2 refrigeration system is a universal solution for supermarkets because it includes low temperature refrigeration, medium temperature refrigeration and heating. Using heat recovery makes this system even more energy efficient as spare heat can be used for tap water or space heating. This kind of refrigeration rack can be customized according to customer needs and integrated into building management system, which makes refrigeration system easy to monitor and control. The key points of this solution are: customizable, environmentally friendly, energy efficient.

Retail solutions for supermarkets

When it comes to supermarkets, complex engineering solutions are required. Choosing the right system will save a lot of resources and minimize costs. There is a huge amount of heat energy that needs to be transferred in the supermarkets and it is necessary to manage it effectively. It is also important to think about long-term and reliable options when choosing refrigeration system for supermarkets.

Fan coil units

Fancoil units are used to transfer heating or cooling energy to the market

CO2 Systems

Heart of the refrigeration system. Produces freezing and cooling energy for cabinets and cold rooms. Provides heat for heat recovery systems

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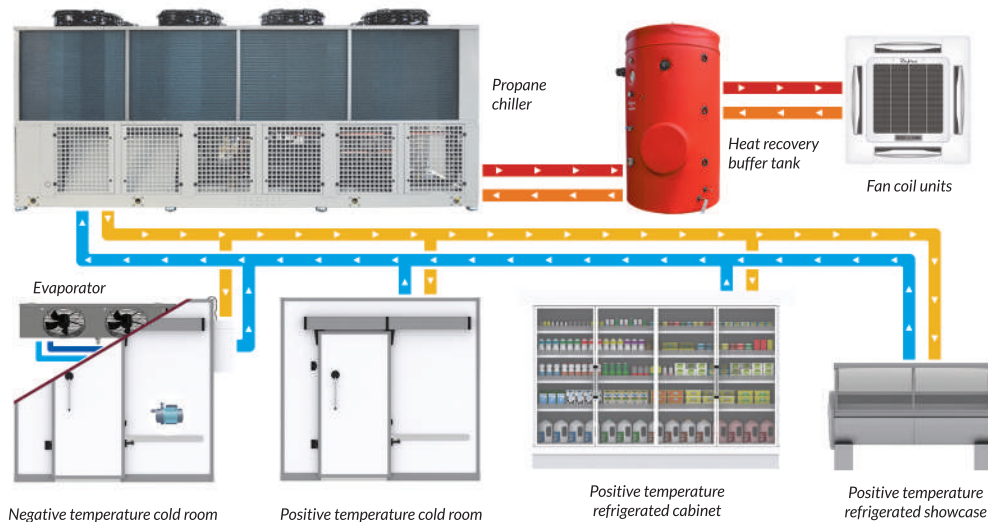
Air heat exchangers

Air cooled condensers or drycoolers for refrigeration systems. Rigid construction and modern technology

15



PROPANE CHILLER



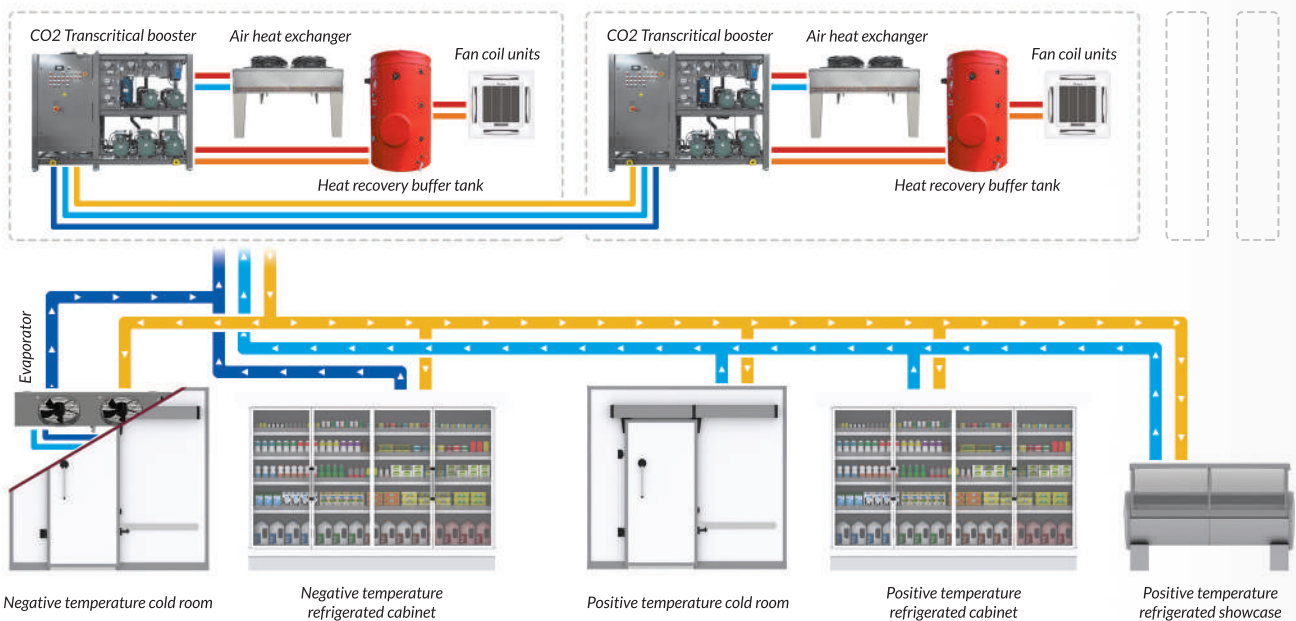
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RETAIL SOLUTIONS FOR HYPERMARKETS

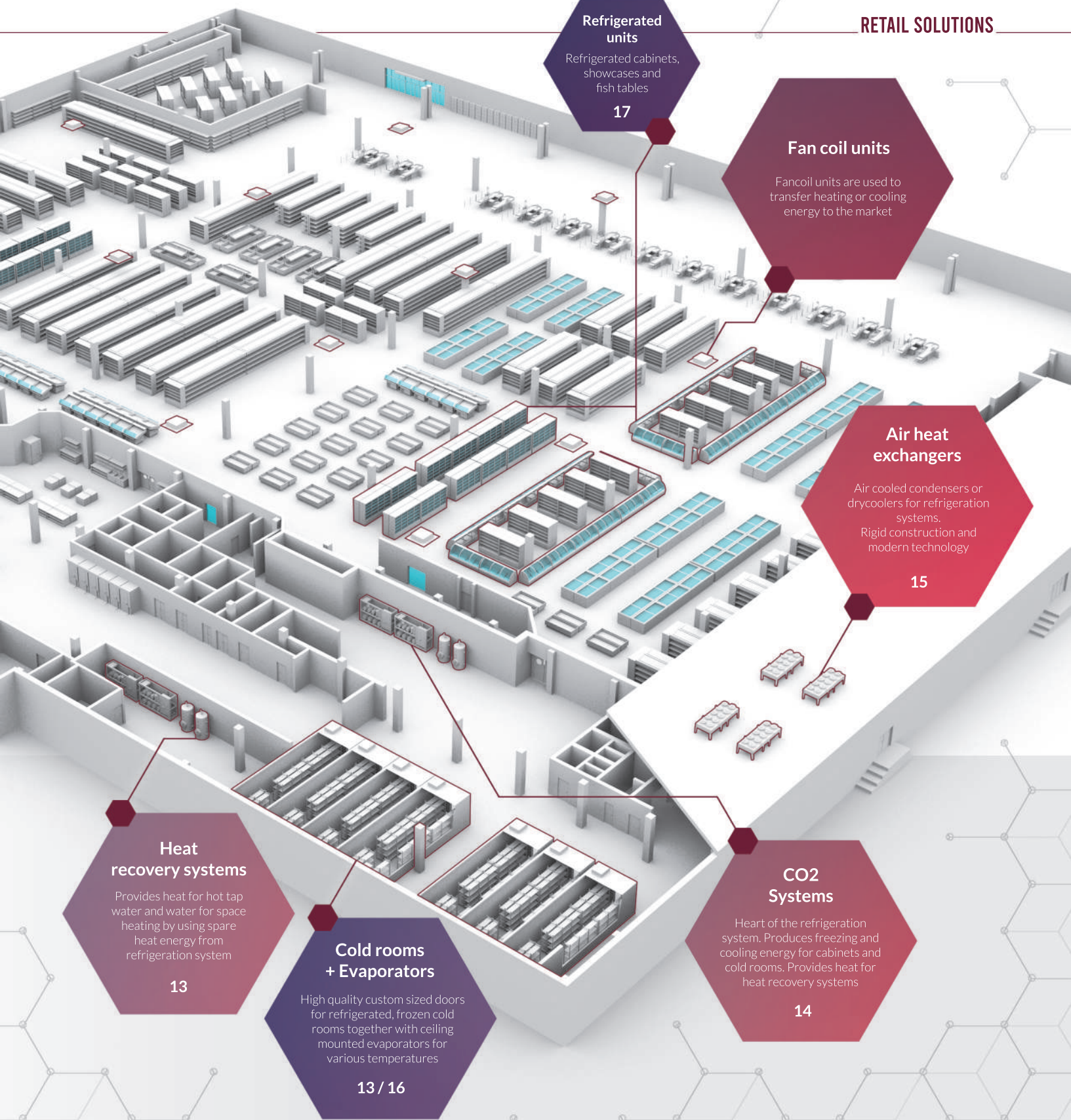
Retail solutions for hypermarkets

The most meticulous solution must be selected for hypermarkets because of megawatts of energy demand for heat transfer. Hypermarkets also have a big demand for different temperature zones for areas like retail hall, product packaging area, storage, freezing rooms and much more. That means every little detail in design, material or equipment selection needs special attention. When decision is made, it is very important to keep in mind the reliability of engineering part. Two of the main points of considerations are system safety and keeping the products fresh. Looking at today's trends in retail refrigeration it is seen that CO2 refrigeration systems are getting more and more popular.

CO2



CO2 refrigeration system for hypermarkets is a customized system that includes low temperature refrigeration, medium temperature refrigeration, heating and can include AC cooling. This kind of refrigeration rack is designed according to customer needs and can be integrated into building management system, which makes refrigeration system easy to monitor and control. High capacity systems can be split to separate refrigeration racks. This helps to achieve very high capacity and provides additional reliability. The key points of this solution are: customizable, environmentally friendly, energy efficient.





Blast chillers

Refr blast chillers are conceived to be efficient and long lasting product

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Electric ranges

Industrial electric ranges made from high quality stainless steel. Different size and power options including only the highest quality components



Refrigerated counters

Counter refrigerators are ideal for kitchens who use fresh, chilled ingredients during mealtime preparation, and need the ingredients easily to hand.

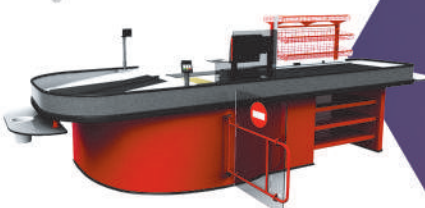
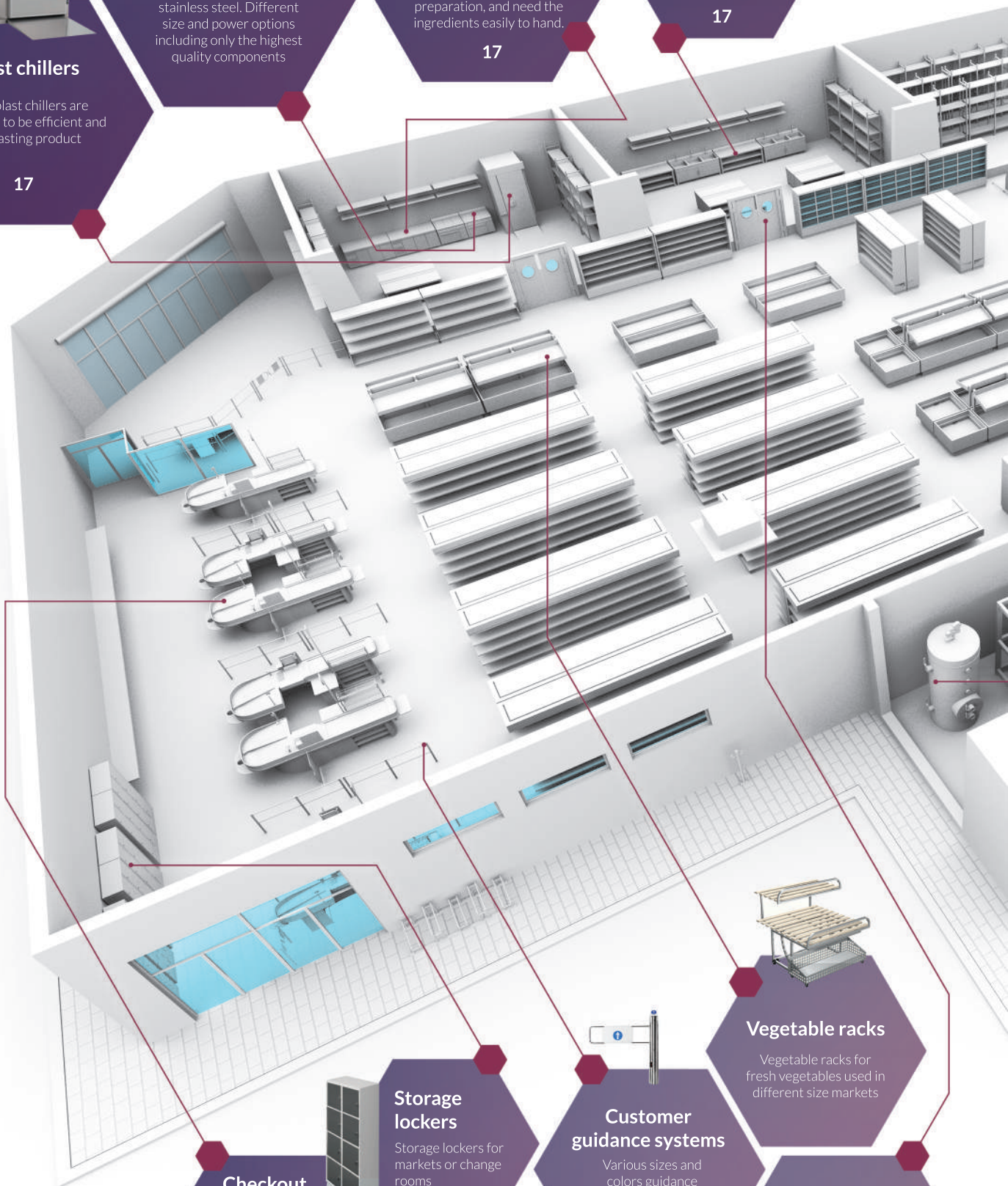
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Work tables

Top quality stainless steel work tables for professional work in the food industry

17



Checkout systems

Ergonomically designed checkouts for both costumers and staff which completely satisfies their needs and suits in any type of the shop

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Storage lockers

Storage lockers for markets or change rooms



Customer guidance systems

Various sizes and colors guidance systems from stainless steel or other materials



Vegetable racks

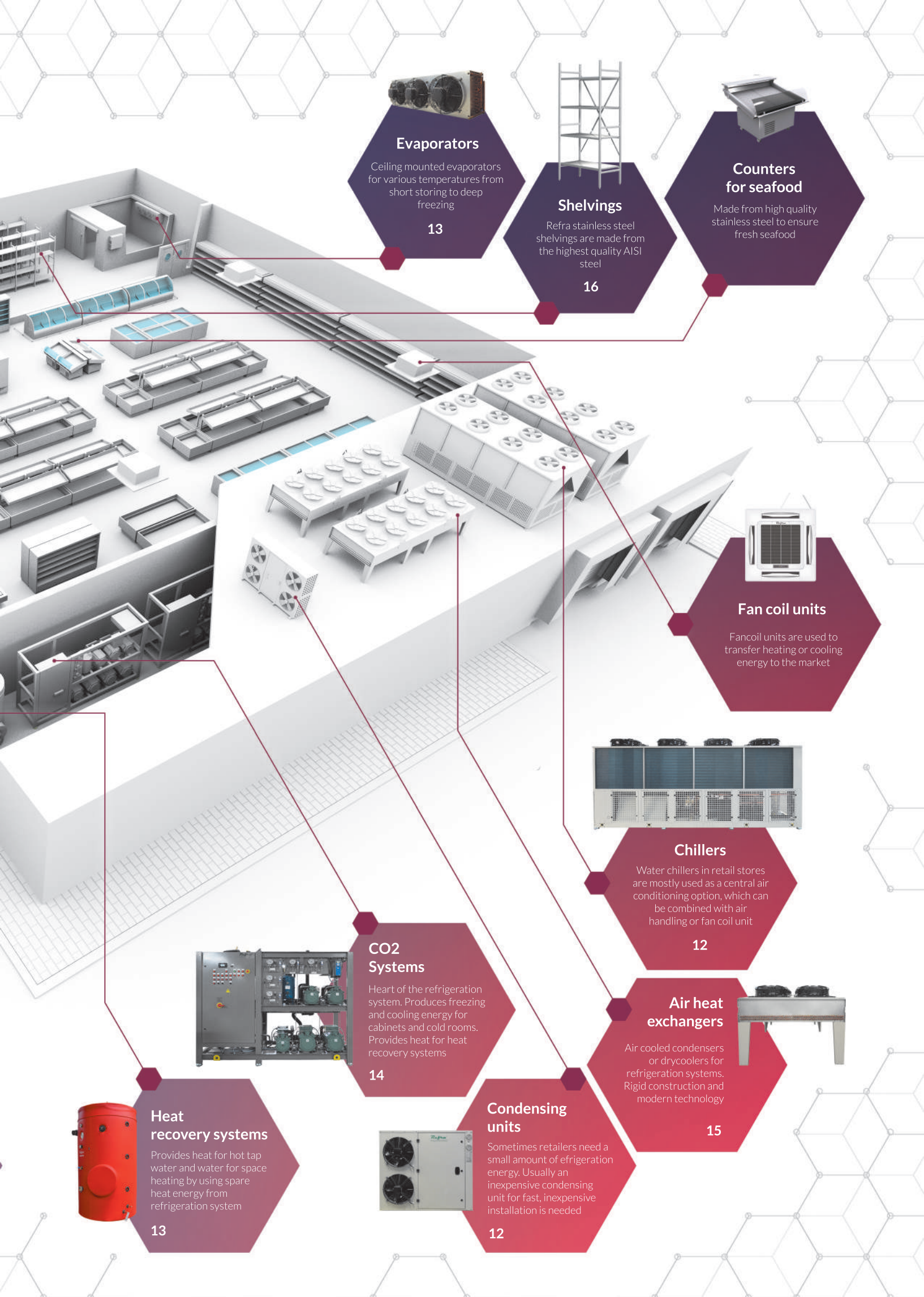
Vegetable racks for fresh vegetables used in different size markets



Cold room doors

High quality custom sized doors for refrigerated, frozen cold rooms and area separation doors

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Evaporators

Ceiling mounted evaporators for various temperatures from short storing to deep freezing

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Shelvings

Refra stainless steel shelvings are made from the highest quality AISI steel

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Counters for seafood

Made from high quality stainless steel to ensure fresh seafood



Fan coil units

Fancoil units are used to transfer heating or cooling energy to the market



Chillers

Water chillers in retail stores are mostly used as a central air conditioning option, which can be combined with air handling or fan coil unit

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CO2 Systems

Heart of the refrigeration system. Produces freezing and cooling energy for cabinets and cold rooms. Provides heat for heat recovery systems

14



Heat recovery systems

Provides heat for hot tap water and water for space heating by using spare heat energy from refrigeration system

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Condensing units

Sometimes retailers need a small amount of refrigeration energy. Usually an inexpensive condensing unit for fast, inexpensive installation is needed

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Air heat exchangers

Air cooled condensers or drycoolers for refrigeration systems. Rigid construction and modern technology

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Condensing units

Sometimes retailers need a small amount of refrigeration energy. Usually an inexpensive condensing unit for fast, inexpensive installation is needed. Reliable equipment is still required, despite the requests. Even in low cost equipment, JSC Refra uses only trustworthy parts and brands – Bitzer, Copeland, Bock, EBM, Danfoss, Ziehl Abegg, Refra condenser coils. If bigger capacities are required, JSC Refra offers customized solutions with wide variety of most known component brands used in production. High level of customization is available and the finished product is guaranteed to be exactly what customer needs. The range of capacity is from 1 kW and up to more than 1000 kW.



Chillers

Water chillers in retail stores are mostly used as a central air conditioning option, which can be combined with air handling or fan coil units. Moreover, it can be used for middle temperature cold room cooling. This system can be supplemented with various additional options or modifications, such as heat recovery, free-cooling and reversible cycle.



Heat recovery systems



Energy recovery became incredibly important in commercial refrigeration industry. Refrigeration in supermarkets takes a large part of total energy consumption. Refrigeration process has large amounts of energy disposed (or wasted) during condensing or gas cooling (in case of CO2 system) process. This energy can be used for heating up liquid. Process called “de-superheating” can be applied to recover a part of energy by rising temperature of selected liquid to a higher degree (up to +65 °C or more). This part is especially efficient in transcritical CO2 systems. “De-superheater” is generally designed to fulfil hot water demand. It usually varies so buffer tanks are used for hot water storage and in such case there is always hot water of desired temperature.

“De-superheating” has two benefits – it provides free heating and reduces energy that is needed to cool down the refrigerant. If condenser is liquid-cooled, all produced heat energy can be used to raise the temperature of liquid to around +30 °C.



Evaporators

Refra offers new product for commercial refrigeration – small and medium cooling capacity evaporators EM series.

Features:

Copper tubes and aluminum fins with optional hydrophilic coating. Working pressure up to 30 bar for standard systems and up to 120 bar for CO2 systems. Electrical defrost, aluminum case, AC and EC technology fans. Easy to install and maintain.

Fin pith 3,5 mm for room temperatures above zero; 5,5 mm for medium sub-zero temperatures; 7,5 mm for low temperatures and 9,9 mm for very low temperatures.

Quality and reliability. All units are pressure tested and fit PED (Pressure Equipment Directive) – 2014/68/EU. Only high quality copper tubes and fans are used in production.

Custom design evaporators can be offered on request. Refra manager



Angular ceiling mounted cooler;

Cubic type cooler;

Dual air discharge cooler

CO2 Systems

CO2 systems are a good solution for shops and supermarkets. They can work at different temperature settings and are efficient at that. GWP of the refrigerant (CO2) is 1, so it is a future proof option that does not pollute the environment. CO2 systems are very potent for high temperature heat recovery, this adds to the efficiency as you can use a lot of spare energy.

Refra produces 86-103 CO2 racks per year, most of them are for supermarkets. Refra is constantly improving its products by adapting new technologies. More than 20 years of experience in refrigeration, flexibility in production and orientation to the quality of the product lets Refra to produce the product that is safe, efficient and reliable.

It is possible to split standard CO2 systems for markets that Refra produces to three categories:

Condensing units for shops

(low capacity, up to 20 kW, low OR medium temperature);



Condensing units for shops usually have one or two compressors installed, depending on the application. For medium temperature it is one rotary (up to 8 kW at -10 °C evaporating temperature) or reciprocating (8-20 kW at -10 °C) compressor, for low temperature – two reciprocating compressors (up to 15 kW at -35 °C). This type of condensing unit is compact and easy to install.

If there is higher amount of such units required, design could be modified and adapted to customer needs.



CO2 refrigeration racks for supermarkets

(low and medium capacity, up to 150 kW, low AND medium temperature);

CO2 refrigeration racks for supermarkets are a little bit more complex systems that can work at two or more temperature regimes, usually: around -33 °C for low temperature cabinets and cold rooms and around -10 C for medium temperature cabinets and cold rooms. Additionally, such system could have an air conditioning option and produce 7 °C glycol/water. If possible, it is recommended to use heat recovery to not waste energy. Heat recovery from CO2 system could produce hot tap water (up to 65 °C) or water for space heating (up to 40 °C).

Such CO2 refrigeration racks are standardized but can be adapted to customer needs (specific capacity, options).



CO2 refrigeration racks for hypermarkets

(high capacity, from 150 kW; low AND medium temperature).

CO2 refrigeration racks for hypermarkets are always designed specifically for the customer. Temperature settings are the same as for supermarkets, but because of the higher capacity, can differ to better suit the project. For higher capacity systems it is recommended to use parallel compression as energy savings become noticeable.



Refra air heat exchangers

While working with equipment which needs an air cooling, Refra encountered a need to expand its production capabilities. We have developed full brand new production line of different purpose heat exchangers – from simple finned pack coil to various heat exchange units such as condensers, drycoolers, gascoolers and other. Modern technology and tools allows us to perfectly meet customer needs and offer competitive products with reasonable prices and production time.

Refra offers a developed product range of condensers, drycoolers, evaporators and gascoolers with plentiful options, starting with basic unit and up to non-standard product, designed to meet customer requirements. Also other heat exchangers can be offered on customer request. Air coolers, air heaters, fluid coolers/heaters and other hot or cold heat exchange products are available on request.

Refra can offer not only standard products, but large variety of finned pack heat exchangers is available to meet our customer desires. We now offer the production of specific coils for Original equipment manufacturers (OEM). Fully individual product can be developed according to customer requirements, ensuring high quality and stable supply (refrigeration equipment, heat pumps, air conditioning, AHU and other). Almost any type of coil is possible with individual design according to customer requirements – either based on new thermodynamic task or an existing product.

Overview of main production capabilities

Copper tubes

Outside diameter	Wall thickness	Inner surface type	Max op. pressure
5,0 mm	0,23 mm	grooved	48 bar
7,94 mm	0,28 mm	grooved	38 bar
	0,54 mm	smooth	120 bar
9,52 mm	0,28 mm	grooved	30 bar
	0,35 mm	smooth	38 bar
12,7 mm	0,41 mm	smooth	33 bar

Fins

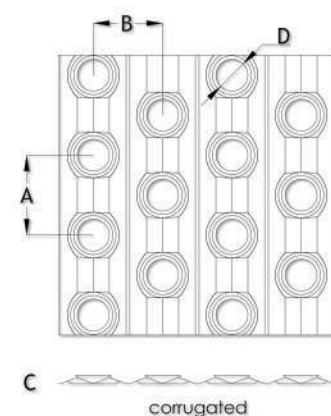
Aluminum, epoxy coated aluminum, hydrophilic aluminum and copper. Fin spacing – 1,5 mm to 9,9 mm. Additional paint coating for maximum anti-corrosion protection

Galvanized steel powder painted frames

stainless steel and aluminum is available

Available fin geometries:

Geometry	D, mm	A, mm	B, mm	Corrugation	Fin spacing
G00	5,00	20,00	17,30	C	1,5 - 3,5 mm
G01	7,94	25,40	19,05	C	1,5 - 3,5 mm
G11	7,94	25,00	21,65	C	1,5 - 4,5 mm
G02	9,52	25,00	21,65	C	1,5 - 4,5 mm
G03	12,7	31,75	27,50	C	1,8 - 6,5 mm
G13	12,7	35,00	35,00	C </td <td>3,5 - 9,9 mm</td>	3,5 - 9,9 mm



Cold room doors

Refra produces wide range of cold room and area separation doors. Our strength is high product quality, competitive prices, flexible approach to meet critical deadlines as required by customer and use of innovative solutions in door production.

Our cold room doors include hinged and sliding models for chiller and freezer applications. All doors are available in custom sizes for temperature ranges from 0°C down to -45°C. We can offer different surfaces: painted metal sheet (colors on request), stainless steel (standard and decorated), and fiberglass. Plastic "U" shape frame makes doors completely cold-bridge free. Freezer doors are equipped with heating cables, double gasket and threshold. We also offer automatic kits for sliding doors with various options like remote controllers, radars, pull cords, batteries.



Area separation doors

Area separation doors, also called "swinging doors" designed to divide processing areas with a heavy passage of people and/or trolleys. We offer three models of area separation doors:

Polyurethane inside doors

Can be ordered with different surfaces: painted metal sheet (colors on request), stainless steel (standard and decorated) or fiberglass.

Hard plastic doors

Made from polyethylene PE500 sheet. Can be ordered with different colors and hinge applications.

Flexible PVC doors

Made from welded together clear and grey PVC strips. Can be ordered with different hinge applications.



Shelvings

Refra stainless steel shelvings are made from the highest quality AISI steel. They are resistant to various harmful factors. These shelvings are most often used in culinary industry.

The shelving system assembly technology is extremely easy without the use of additional tools. They are easily disassembled and transported to another location. On racks it's possible to store and display a wide range of food and industrial products. Shelving system can be configured with a variety of dimensions, use different amount of shelves. Shelving contains the following main parameters: length, width, height and number of shelves.

Work tables

Top quality stainless steel work tables for professional work in the food industry: cafes, restaurants, bars, canteens, meat factories, fish factories and many other food processing and manufacturing facilities.



Checkouts

Together with our valued customers we have created ergonomically designed checkouts for both costumers and staff which completely satisfies their needs and suits in any type of the shop.

Powder coated products are more resistant to moisture, chemicals, reduces the risk of scratches and corrosion

Our engineers are ready to offer solutions which will optimize checkout work and create your shop image



Refrigerated counters

Structure in stainless steel, inner sides in AISI 304 magnetic and heated door frame for low temp. models; stainless steel feet adjustable in height; door frame completely integrated in the structure itself; trays holder structure in stainless steel;



Blast chillers

Refra blast chillers are conceived to be efficient and long lasting products. This is made possible by the use of high quality components and smart constructive projects. Reliability is allowed by the careful and attentive production system, that includes several tests on every single appliance manufactured.

Structure in stainless steel AISI 304 , interior sides with mirror finishing, space under the evaporator to allow an easy cleaning, core probe as standard, self-closing door equipped with a silicone gasket resistant to low temperatures, magnetic and heated door frame, stainless steel feet adjustable in height, technical room of evaporator and condenser can be easily inspected through a compass opening.





BALTIC STATES
RUSSIA
POLAND
KAZAKHSTAN
GEORGIA
AZERBAIJAN

Artur Aleksejev
+370 616 95366
artur@refra.eu

BELARUS
UKRAINE
MOLDOVA
ROMANIA
CZECH REPUBLIC
SLOVAKIA
AUSTRIA
HUNGARY
CROATIA
SERBIA
BULGARIA
MACEDONIA
GREECE
CYPRUS

Arūnas Ražanas
+370 614 60369
arunas@refra.eu

ICELAND
NORWAY
SWEDEN
FINLAND
DENMARK
PORTUGAL
TURKEY

Viktoras Valkūnas
+370 676 29193
viktoras@refra.eu

GERMANY
SWITZERLAND
ITALY

Aleksej Pavšukov
+370 601 78111
aleksej@refra.eu

UNITED KINGDOM
IRELAND
FRANCE
NETHERLANDS
BELGIUM
LUXEMBOURG
SPAIN

Agnė Gruodė
+370 618 34706
agne@refra.eu