



Simply fresh – today and tomorrow

Easy to select and install heat exchangers for refrigeration applications



## Dear Customer,

We are excited that you show interest in Alfa Laval refrigeration products. This brochure gives you an introduction to our energy-efficient heat exchangers, and how you can benefit from them.

Our refrigeration solutions are developed to handle the challenges of today's industries, and are also ready for the future in terms of international refrigerant and emission regulations. We develop highly standardized ranges and classify them by article numbers to facilitate easy selection and quick delivery. This ensures that you always get the right solution from one single supplier.

With our easy-to-use selection guide, you are now able to quickly find the right product for your installation. It also indicates if the products are in stock, to help you optimize your logistics and serve you in the best way possible.

Please contact our business partner or your local Alfa Laval office for the selection guide, or visit <http://www.alfalaval.com/refrigeration> to get all the product and application information you need, 24/7.

Now you can get started on finding the ideal refrigeration solution for your application and we will continue to stay in touch. Thank you.



Harald Hoogendoorn  
Market Manager Commercial Refrigeration  
Industrial Equipment Segment, Alfa Laval

## Simply fresh – today and tomorrow



With more than 80 years of successful heat transfer development, Alfa Laval knows what it takes to deliver energy-efficient solutions for your application.

Our brand is about performance and our goal is to deliver the best products and solutions for your job. This is why our experts are continuously working on making our products more energy efficient, simple and always available for you.

All our solutions are ready for today's challenges and the demands of tomorrow.



## Energy efficiency

### Save energy, reduce costs

- Complete CO<sub>2</sub> product range
- Optimum distribution of refrigerants – high COP\* of entire installation
- Reduces 50–60% energy costs by using EC fans

\* Coefficient of Performance

### Future proof

- Continuous investments in R&D
- State-of-the-art laboratory
- Ready and suitable for natural and low GWP\* refrigerants

\* Global-Warming Potential



## Expert reliability

### Application expertise

- Over 80 years of expertise in heat transfer technology
- Broad application knowledge and hands-on experience

### Alfa Laval brand and quality

- Large client base and more than 5 000 installations across the world
- Certified performance



## Simple and available

### Compatible full range

- Products developed and approved for CO<sub>2</sub> applications, facilitates system design
- All CO<sub>2</sub> products are dry-tested in nitrogen chamber to guarantee top quality without any liquid remaining in the units

### Easy to select and install

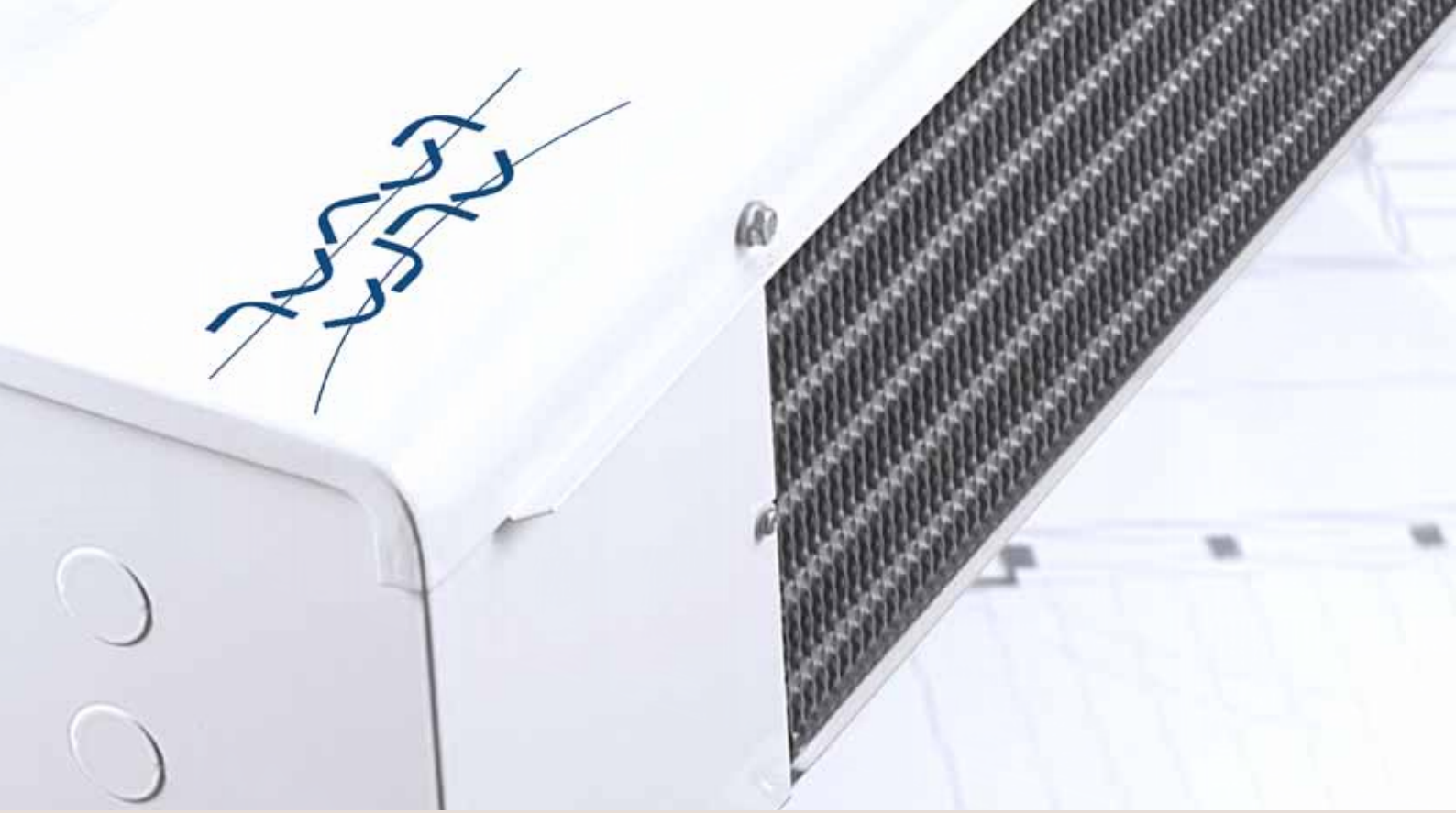
- Standard range available from stock
- Designed for easy and fast installation
- Selection tools for installers and partners

### Local presence and support

- Quick and reliable access to all products and spare parts through partner distribution network
- We speak your language – whichever country, whatever technical challenge



Other pressure vessel approvals are available upon request.



# Today's solutions for tomorrow's demands

Alfa Laval's highly standardized ranges for commercial refrigeration are classified by article numbers to facilitate easy selection and quick delivery. This ensures that you always get the right solution from one single supplier. Detailed drawings in 2D and 3D (AutoCad) and product information are also readily available to help make installation easier.

## Air heat exchangers

Our air heat exchangers are suitable for a broad range of applications. They are typically used in commercial cooling and supermarket applications – walk-in cold rooms, reach-in cooling and freezing cabinets. Quick delivery is ensured for our standard ranges in stock. Based on customer input and market demands, we have developed the new Optigo range for indoor use and the AlfaBlue Jr range for outdoor operations. They are designed to cover all refrigerants and include a dedicated range for CO<sub>2</sub> applications.

### Key benefits

- Simple and straightforward installation and maintenance help save labour hours
- Simple to select and buy, saving precious time
- High quality and energy-saving solutions for lower operational and maintenance costs
- Constant innovation for optimal performance



### Shell-and-tube heat exchangers

Optimized for HFC<sup>1</sup> condensation and evaporation, this unique range of shell-and-tube heat exchangers ensure efficient and reliable performance with all HFC refrigerants (also with new R407F), HFO<sup>2</sup>, ammonia and propane. The range is typically used as dry expansion evaporators for air-conditioning (A/C), refrigeration process cooling, condensers, and de-superheaters (flooded evaporators for A/C).

#### Key benefits

- Unique design for CXP<sup>3</sup> condensers that fits two duties (2 or 4 passes), no need to bring two units for the same installation
- Cleanable and compact solution for easy maintenance and space savings
- Simple to select and buy, saving precious time
- High quality and energy-saving solutions for lower operational and maintenance costs



### Brazed plate heat exchangers

Alfa Laval is the market leader for all kinds of brazed plate heat exchangers for applications such as refrigeration, HVAC, heat pumps etc. The different types of heat exchangers support a wide variety of HFC refrigerants such as R404A and R134a, and natural refrigerants (propane, ammonia, CO<sub>2</sub>). AXP<sup>4</sup> and CBX<sup>5</sup> models meet the high working pressure demands of CO<sub>2</sub>.

#### Key benefits

- Real "built-in" distributor for DX<sup>6</sup> Evaporator (EQ<sup>7</sup>) results in a smaller unit with lower investment
- 3-year performance guarantee
- Fast supply of standard range from stock or factory, less need for distributor to keep stock, with installer always having the right solutions
- One-stop shop for brazed plate heat exchangers for all refrigeration applications, including high pressure CO<sub>2</sub>
- Simple to select and buy, saving precious time
- High quality and energy-saving solutions for lower operational and maintenance costs



## Functionality table

The functionality table reflects the commercial refrigeration systems and their suitability for air, brazed plate and shell-and-tube heat exchangers.

Product or function	Air heat exchangers	Shell-and-tube heat exchangers	Brazed plate heat exchangers
Condenser	●	●	●
Evaporator	●	●	●
Liquid heater/cooler	●	●	●
Economizer			●

<sup>1</sup> HFC – Hydrofluorocarbon

<sup>2</sup> HFO – Hydrofluoroolefin

<sup>3</sup> CXP – Condenser Extra Performance

<sup>4</sup> AXP – Alfa X-treme Pressure line

<sup>5</sup> CBX – Copper Brazed Extreme Pressure

<sup>6</sup> DX – Direct Expansion

<sup>7</sup> EQ – integrated refrigerant distribution system (Equalancer system)



# A complete range for every refrigeration application and function

Alfa Laval refrigeration products and solutions are used across industries throughout the entire value chain, such as frozen and fresh food production, preparation, storage and transportation.

Our customer base includes numerous local and international installers, contractors, system builders, OEMs, distributors and wholesalers in the commercial and industrial refrigeration markets.

## Frozen food

Our range of efficient air coolers significantly improves the quality of frozen products, while at the same time minimizing the forming of ice crystals. As many of our customers have noted, fast freezing at low costs means fresher products and increased operational profitability.

We offer a comprehensive range of air, shell-and-tube and brazed plate heat exchangers that ensure optimal cooling conditions and substantial savings.



## Fresh food

Cooling is all about keeping food fresh. The design of our refrigeration range sets focus on food safety in all aspects – ensuring the right temperature for each food product without losing its nutrients and quality.

At Alfa Laval, you can find an optimal solution from our comprehensive range of energy-efficient air, brazed plate and shell-and-tube heat exchangers – helping you keep your food fresh at every capacity level.



## Food preparation

Ideal for working and processing rooms with high flows of activity, Alfa Laval's range of air heat exchangers provides unmatched cooling efficiency. Our range creates the optimal temperature for maximum hygiene and yet maintains a suitable working environment for food workers.

Our customers from the food industry benefit from many of the most advanced technologies available, all of which are in full compliance with FDA regulations and other exceptional hygiene requirements.



## Cold storage

The complete range of air heat exchangers is ideal for use in the cold storage of products such as vegetables, meat, fruit and flowers. Perfect temperature control ensures that these products have a maximum shelf life, with excellent condition, taste and quality.

All our heat exchanger ranges are developed for ultimate reliability, giving you peace of mind when it comes to longer-term cold storage of perishable products.



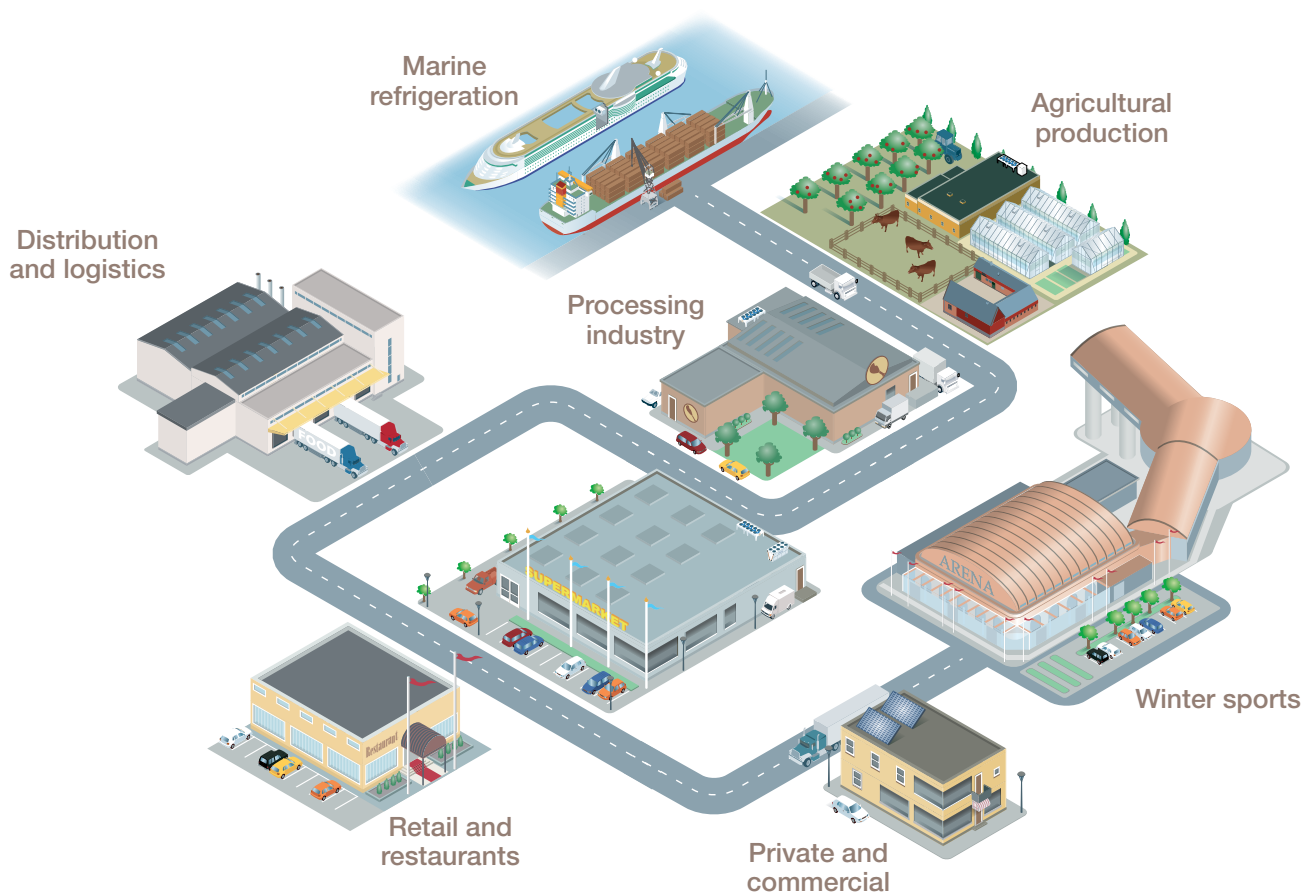
# Product applications

## Any application, any function, any refrigerant

### Top performance for every part of the value chain

From processing factories and distribution centres, to retail outlets and winter sports complexes, we offer reliable heat exchangers that deliver energy-efficient performance, whatever the application. This range is quick and simple to purchase and install, and delivers unparalleled reliability, helping you save precious time and costs.

Alfa Laval refrigeration solutions are trusted by numerous customers across a wide range of industries. And to help you and your customer find the areas where our products can be applied to, we have created a brief overview in the following pages.

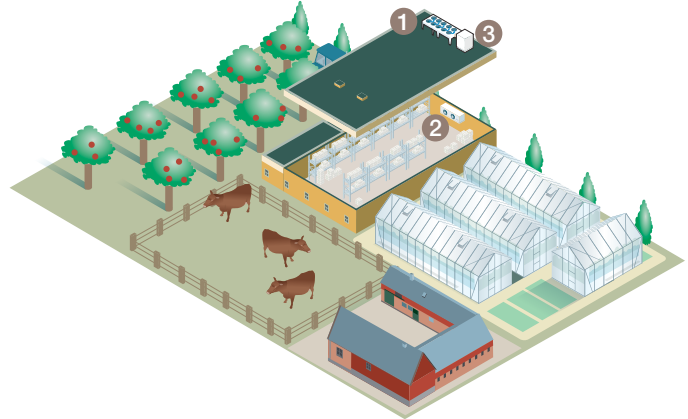




## Agricultural production

Farmers and producers of perishables such as fruit and vegetables need high-quality cooling to keep their products fresh over time. Alfa Laval offers a specific range of heat exchangers for maintaining the quality of goods stored in cold rooms.

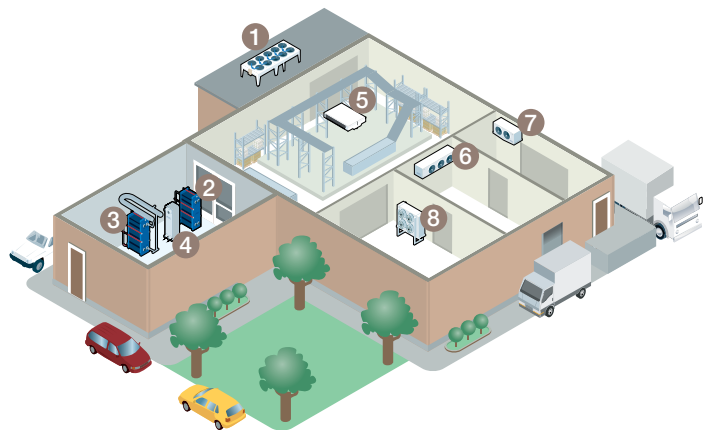
1. Air-cooled condenser / dry cooler / CO<sub>2</sub> air gas cooler
2. Air cooler – single discharge
3. Brazed plate heat exchanger
3. Shell-and-tube heat exchanger



## Processing industry

Important in all refrigeration chains is the processing of raw material into a finished quality product, ready for sale. This example is a chicken factory where Alfa Laval refrigeration equipment ensures a final product of the highest quality.

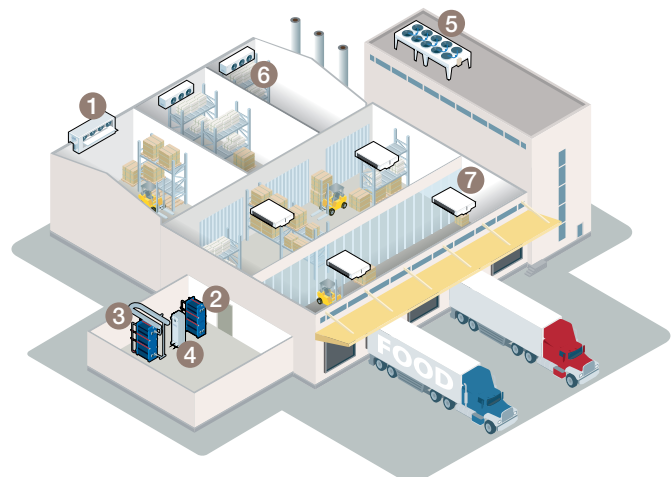
1. Air-cooled condenser / dry cooler
2. Semi-welded plate heat exchanger
3. Ammonia liquid separator
4. Fusion-bonded plate heat exchanger
5. Air cooler – dual discharge
6. Air cooler – single discharge
7. Air cooler – single discharge
8. Shock air cooler



## Distribution and logistics

Once processed, food needs to be stored in cold rooms before being shipped to consumers. These large storage facilities depend on energy-efficient, reliable refrigeration systems. The cooling and freezing duties are varied and demanding, and many different heat transfer solutions are required. Alfa Laval supplies all of them.

1. Insulated cooler
2. Semi-welded plate heat exchanger
3. Ammonia liquid separator
4. Fusion-bonded plate heat exchanger
5. Air-cooled condenser / dry cooler
6. Air cooler – single discharge
7. Air cooler – dual discharge



# Product applications

## Retail

Refrigeration is a major concern when food arrives in retail environments like supermarkets. They are usually air-conditioned and food here is stored in cold rooms. Supermarkets use reach-in and walk-in cold counters where fresh and frozen food is exposed in a safe, temperature-controlled way.

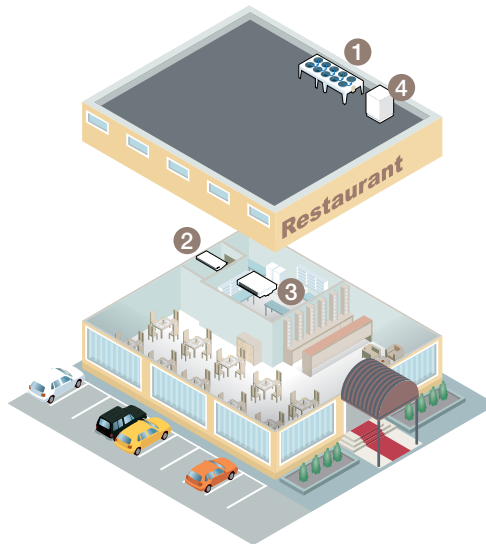
1. Air-cooled condenser / dry cooler / CO<sub>2</sub> air gas cooler
2. Air cooler – single discharge
3. Air cooler – dual discharge
4. Air cooler – single discharge
5. Shell-and-tube heat exchanger
5. Brazed plate heat exchanger



## Restaurants

Food has to be kept at its freshest when it comes to restaurants and dining venues. Alfa Laval provides air-conditioning and refrigeration solutions in the dining area, cold rooms, storage, freezers and display counters.

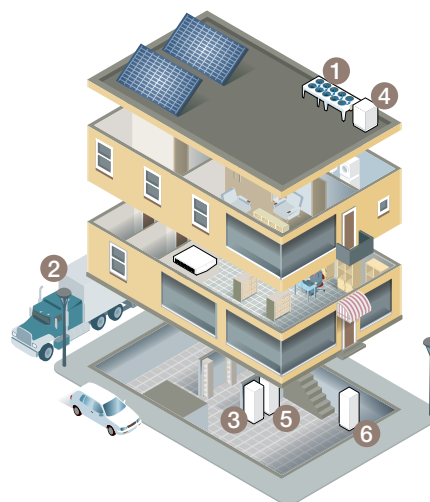
1. Air-cooled condenser / dry cooler / CO<sub>2</sub> air gas cooler
2. Air cooler – single discharge
3. Air cooler – dual discharge
4. Brazed plate heat exchanger
4. Shell-and-tube heat exchanger



## Private and commercial use

Alfa Laval's wide range of heat exchangers is found in numerous residential and commercial climate applications – including air-conditioning (chillers), tap-water heating (boiler/solar), heat pumps and transport refrigeration.

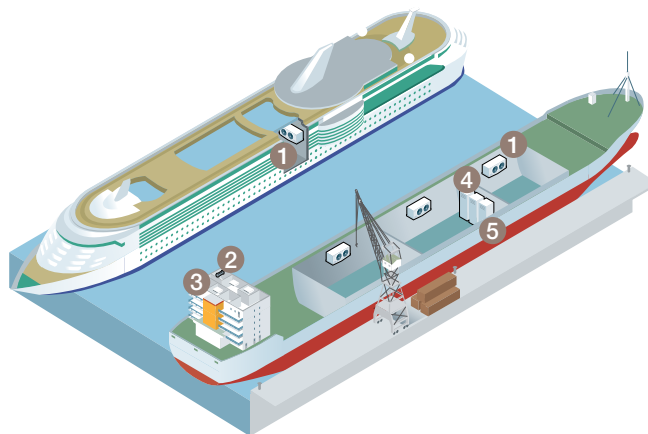
1. Air heat exchanger
2. Brazed plate heat exchanger (transport cooling)
3. Brazed plate heat exchanger (boiler)
4. Shell-and-tube heat exchanger
4. Brazed plate heat exchanger (chiller)
5. Brazed plate heat exchanger (heat pump)
6. Brazed plate heat exchanger (solar system)



## Marine refrigeration

Life on a ship requires air-conditioning. Cold storage for food is equally important. Alfa Laval can supply all the components needed for refrigeration and air-conditioning systems – including evaporators and condensers, air coolers and plate heat exchangers. They can be installed on cargo ships, cruise ships, ferries, yachts and navy ships.

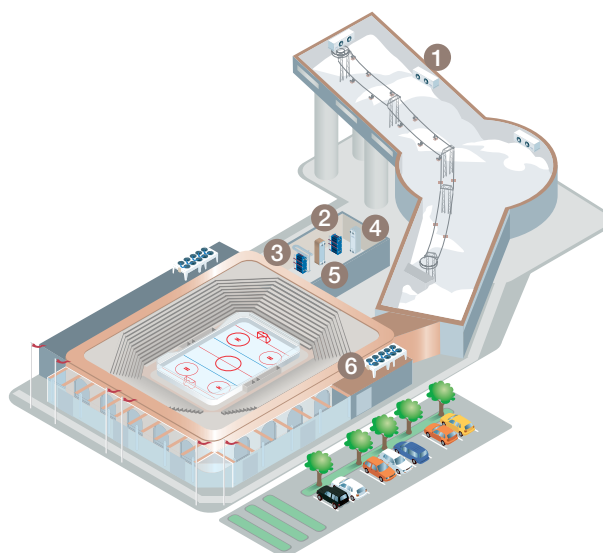
1. Air cooler – single discharge
2. Shell-and-tube condenser (fresh/seawater)
3. Shell-and-tube heat evaporator
4. Braze plate heat exchanger
5. Shell-and-tube heat exchanger



## Winter sports

Winter sports arenas are used for all types of events around the year. Alfa Laval offers a complete range of climate equipment to create the best ice for hockey, the best climate for concerts, the best comfort for horse show jumping, and the best snow for indoor skiing.

1. Air cooler – single discharge
2. Semi-welded plate heat exchanger
3. Ammonia liquid separator
4. Fusion-bonded plate heat exchanger
5. Braze plate heat exchanger
6. Air-cooled condenser / dry cooler



If you are interested in any other application that might not have been mentioned here, please contact your local Alfa Laval representative. We are happy to help you find the right product and solution for your application.

On [www.alfalaval.com/refrigeration](http://www.alfalaval.com/refrigeration) you can find our product applications in an animation, optimized for tablets and smartphones.

### Alfa Laval in brief

Alfa Laval is a leading global provider of specialized products and engineered solutions.

Our equipment, systems and services are dedicated to helping customers optimize the performance of their processes. Time and time again.

We help our customers to heat, cool, separate and transport products such as oil, water, chemicals, beverages, foodstuffs, starch and pharmaceuticals.

Our worldwide organization works closely with customers in almost 100 countries to help them stay ahead.

### How to contact Alfa Laval

Scan to learn more about Alfa Laval refrigeration solutions and find a distributor near you. Or you can always get up-to-date Alfa Laval contact details for all countries at [www.alfalaval.com/contact-us](http://www.alfalaval.com/contact-us)



You can also download product information and selection guides free of charge at [www.alfalaval.com/refrigeration](http://www.alfalaval.com/refrigeration)

Alfa Laval partner:

