

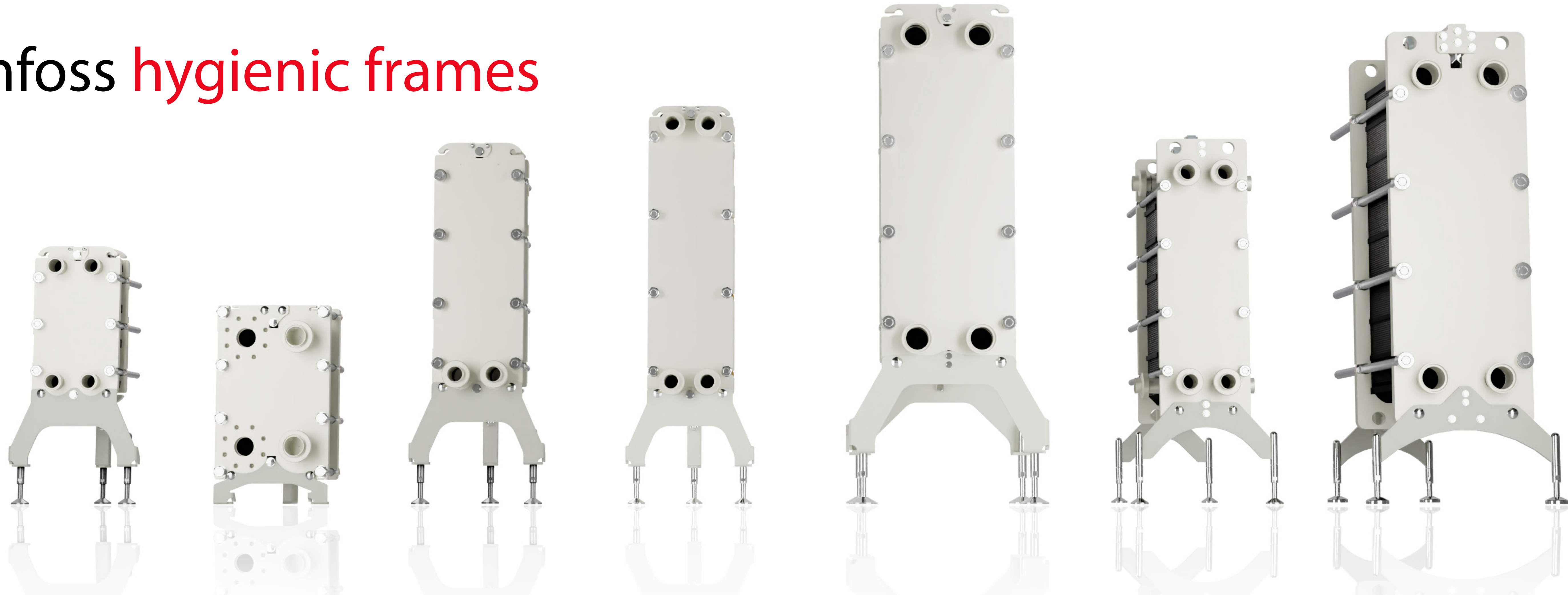
# Hygienic gasketed plate heat exchangers for the **food and beverage industry**

Heat exchanger solutions that adhere to the strict hygienic demands of the industries and complies with FDA material standards.





# Danfoss **hygienic frames**



Our hygienic gasketed plate heat exchangers are made for applications with strict hygienic requirements and use FDA compliant materials. We care greatly about your end product and take the necessary steps to ensure the highest output quality. Each solution is designed based on your specifications to provide the perfect conditions for your product.

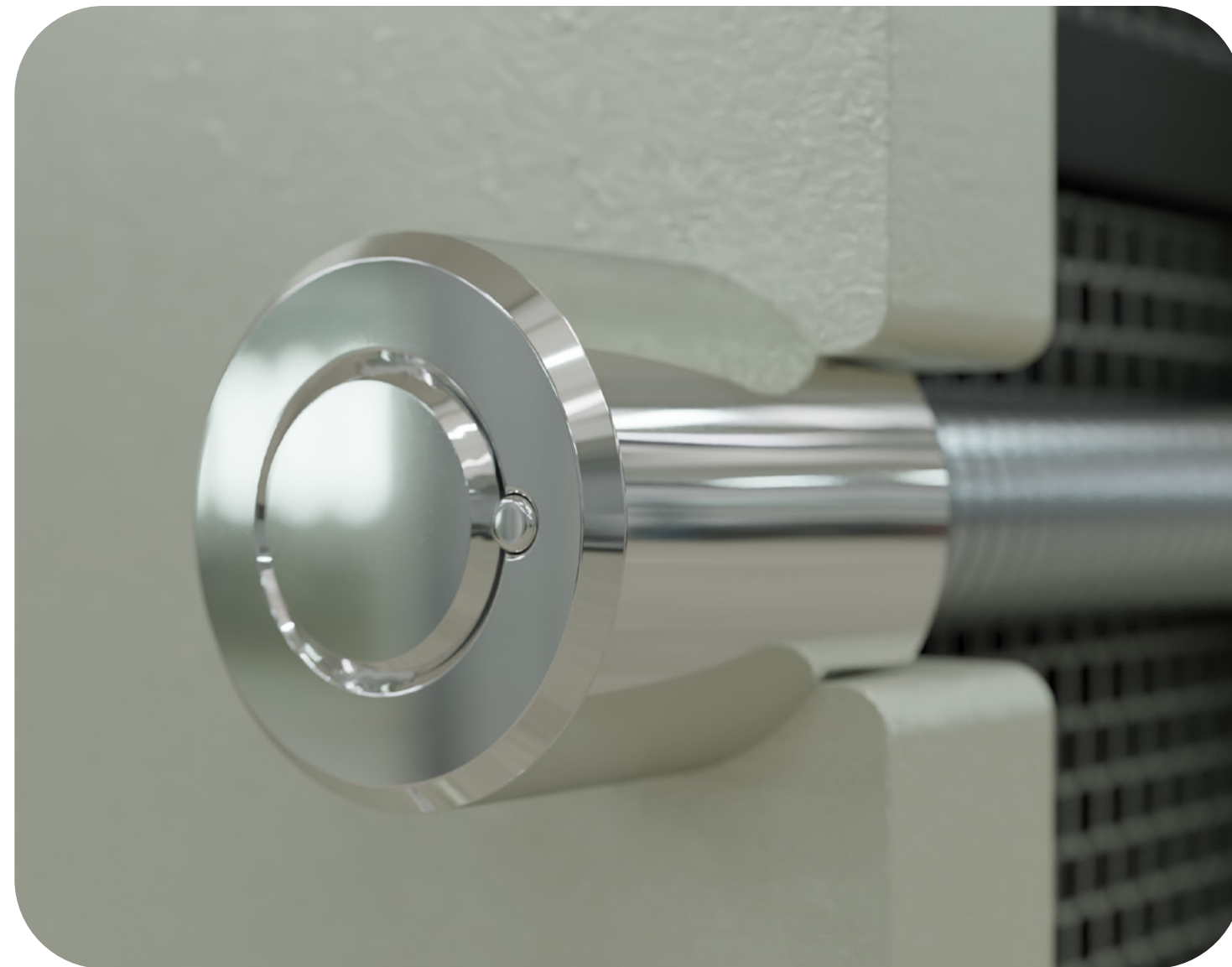
- Frame design according to latest hygienic requirements of the industries and complies with FDA material standards.
- Plate technology made to provide the highest output product quality. We ensure gentle media treatment during processing with precise flow control, perfect temperature profiles, and the optimal residence time for all applications.

- Cladded or solid stainless steel frames designed to be easily accessible for quick inspection, maintenance, or cleaning – including cleaning in place (CIP).
- Get huge savings on your power consumption with our regenerative pasteurizers that can recycle up to 95% of the energy.

- General technical specifications:  
**PN:** 10 - 25 bar  
**Temperature:** -10 - 150 C°  
**Connection sizes:** DN25 - DN125  
**Connections:** DIN11853-1, DIN11864-2, DIN11851, ISO2852 Clamp  
**Certification:** PED, ASME U, CRN  
Designed according to 3A



# Hygienic frame **feature highlights**



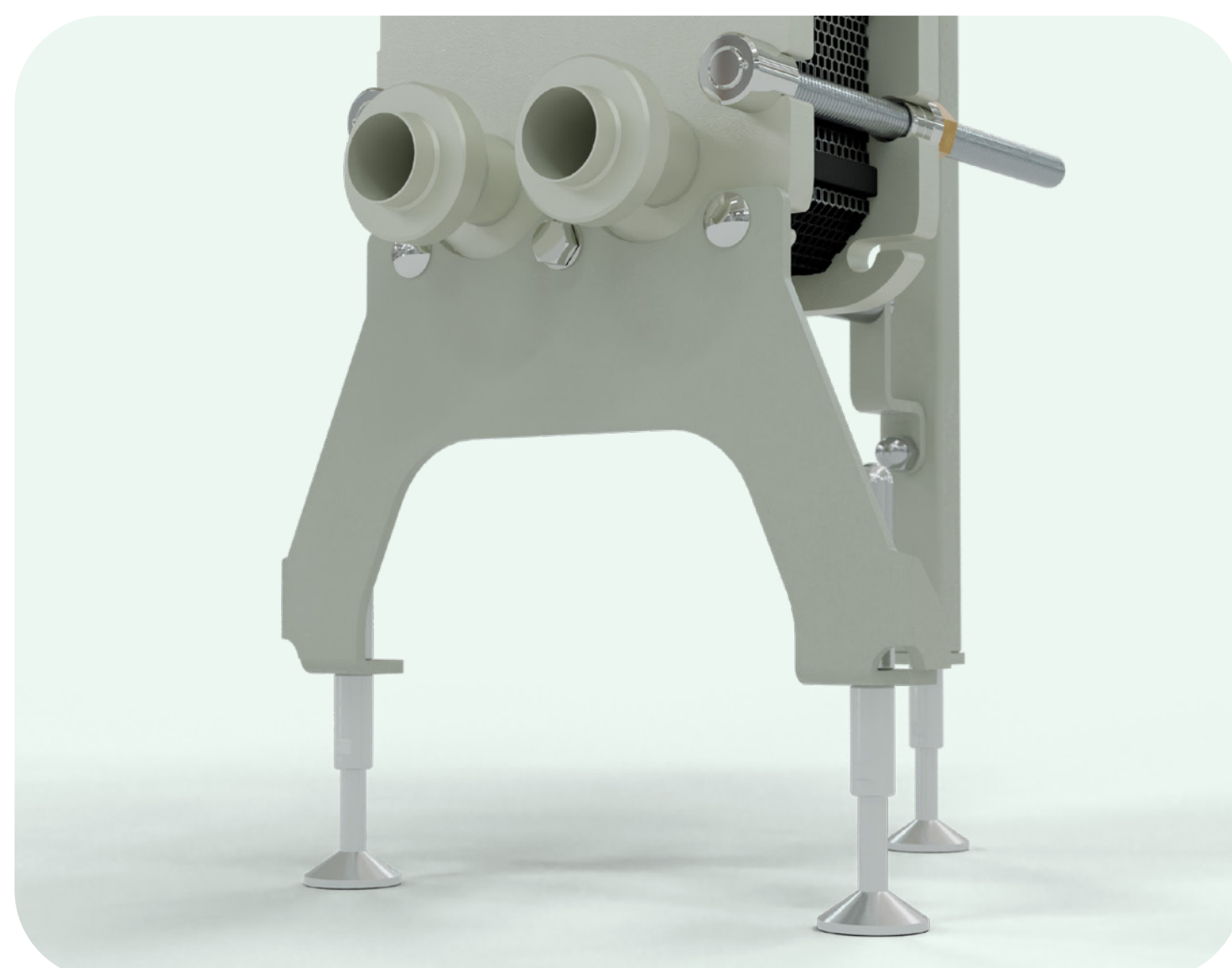
## Locking pins

Locking pins secure the nut to the tie rod, preventing it from loosening due to vibrations and other forces during maintenance or operation. A solution that keeps the heat exchanger hygienic at all times.



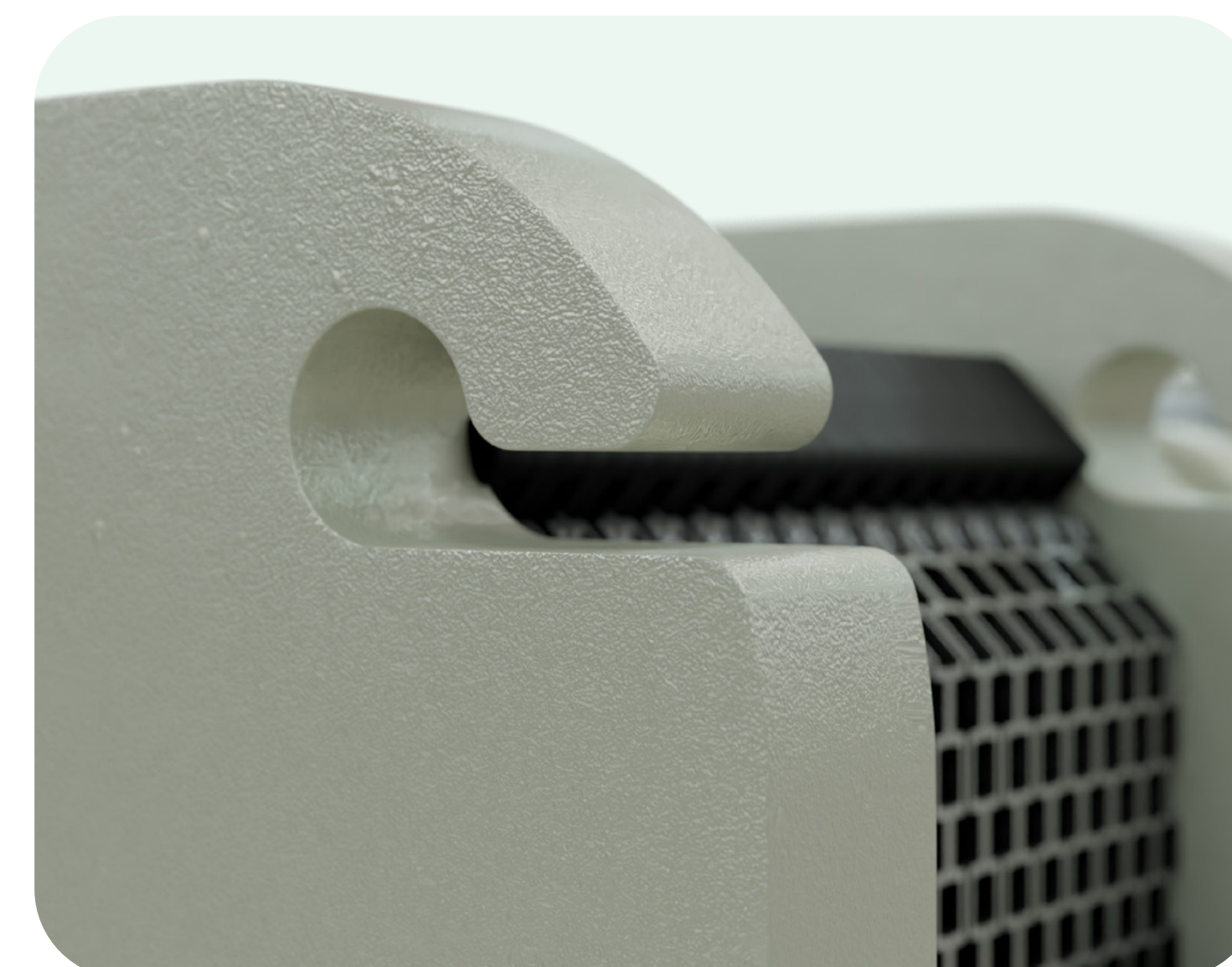
## Frame extender

It minimizes the footprint of heat exchangers by requiring less space for plate integration. This feature not only optimizes spatial efficiency but also simplifies service and maintenance processes, ensuring ease of access and reduced downtime.



## Brackets

The choice is up to you. Install it on the floor or on a skid. The newly designed brackets allow both options.

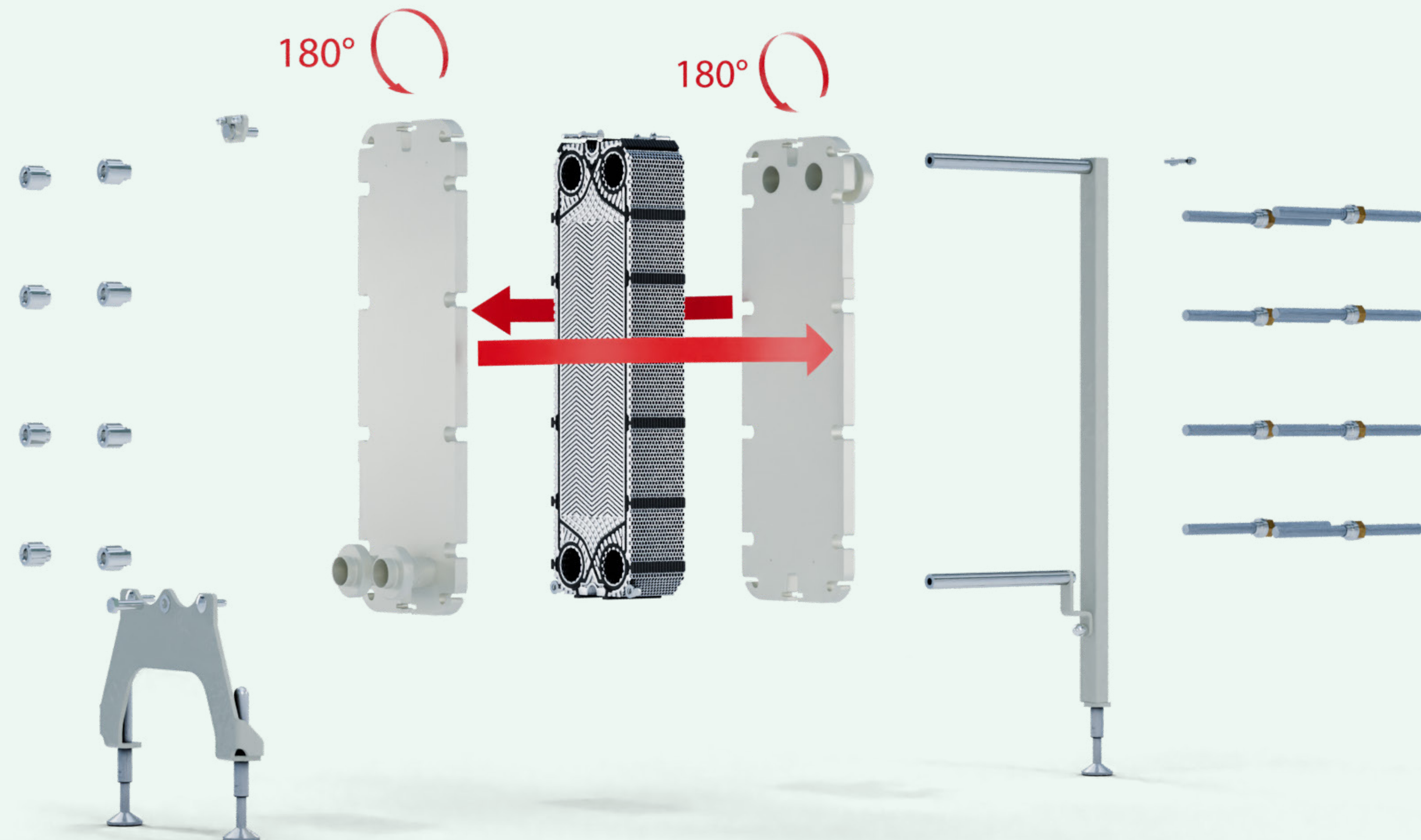


## Lifting lugs

Boost safety by enabling easy lifting and preventing damage to the heat exchanger. They ensure secure handling without extra tools, streamlining installation and maintenance.



# Hygienic frame **feature highlights**



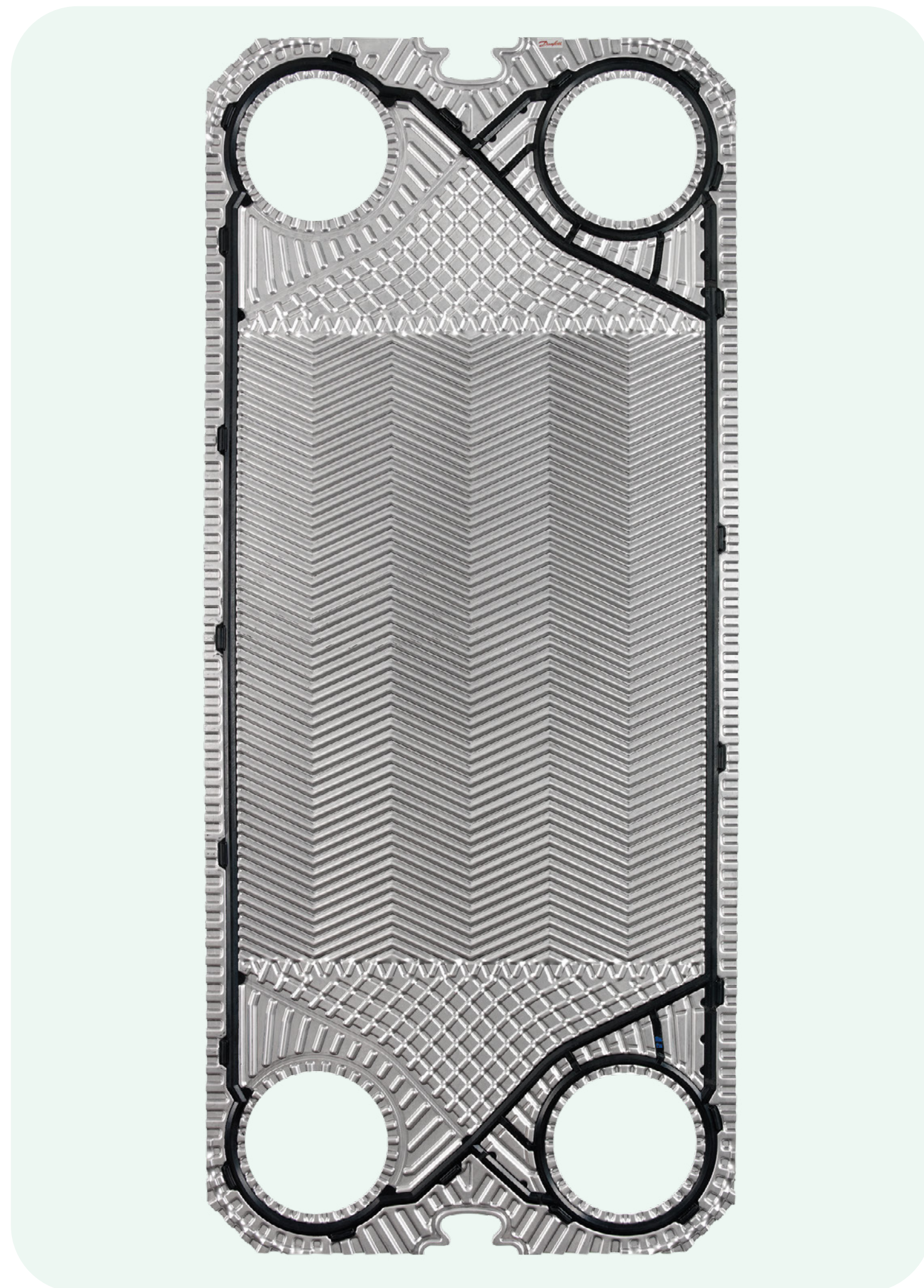
## Modular frames

Our new modular frames are designed with flexibility in mind. They frames are identical and can therefore be flipped and rotated to serve as both head and follower, redcuing complexity and resulting in shorter delivery times.



# Fishbone and Free Flow plate technology

The Fishbone plate pattern is featured in most Danfoss plate heat exchangers.



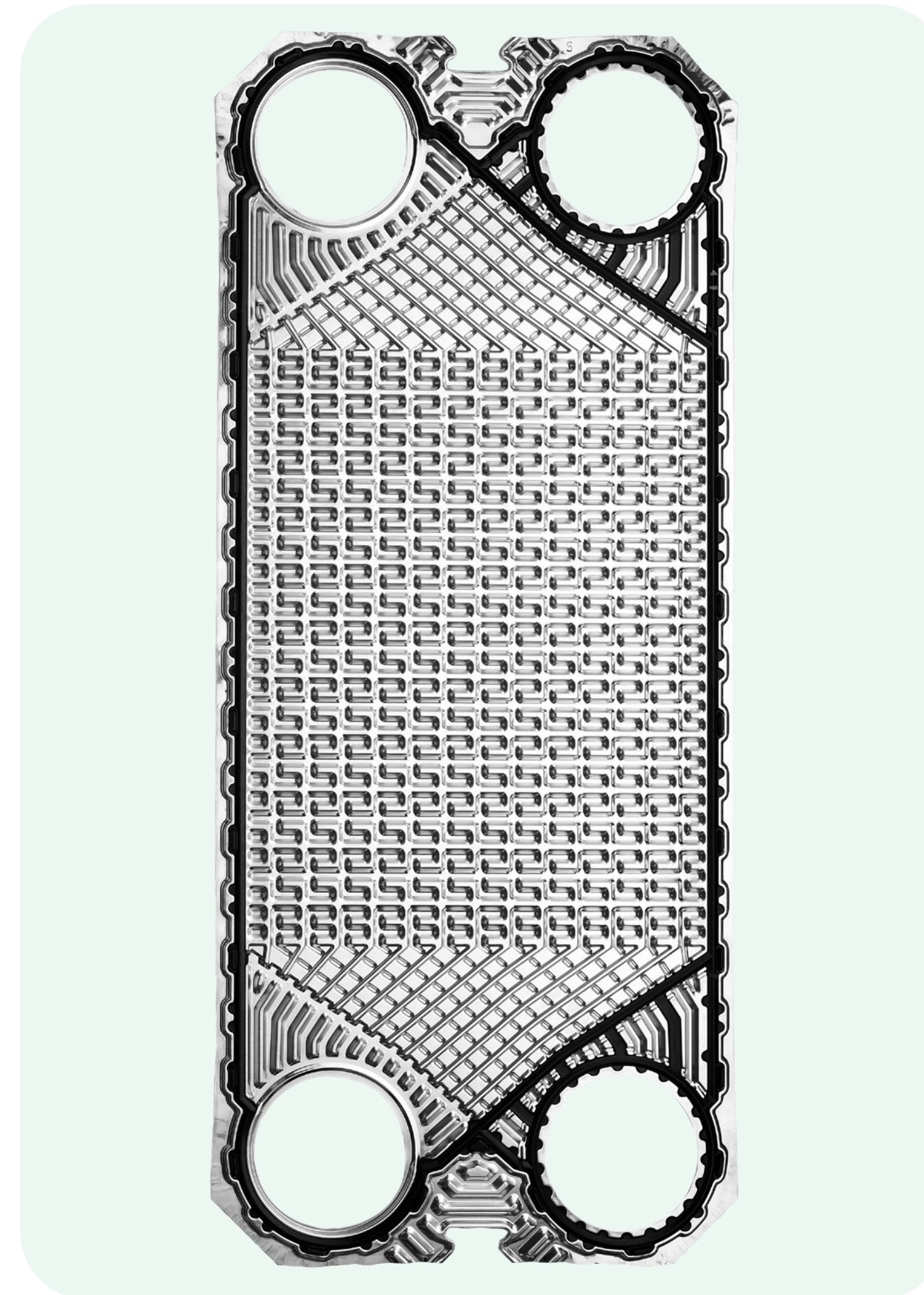
Designed to maximize turbulent flow even at low flow rates, this pattern achieves great heat transfer. The pattern has proved its effectiveness through rigorous testing and is the default choice for plate heat exchangers.

Variants of the Fishbone pattern are designed to create different levels of turbulence, use a different pressure drop and meet different thermal requirements, while maximizing their inherent self-cleaning effect. Each variant fills a particular niche, or is aimed at a certain type of duty. This flexibility allows us to optimally cover all your heat transfer needs, no matter the application.

## Fishbone plate benefits

Special features include a reinforced hanging system for better suspension, an optimized distribution area that prevents stagnant zones, a maximized heat transmission area for high performance, and the unique alignment system that ensures proper alignment of the plate pack in the assembled heat exchanger.

The Free Flow pattern is designed to treat media with high viscosity, fiber and particle contents, or considerable risk of fouling.



The deep and wide channels provide ample room for difficult media to flow effortlessly, ensuring gentle treatment of the output product, leading to sustainable quality improvements.

## Free Flow plate benefits

Since there is only line contact, even long and sticky particles will not get stuck and clog the heat exchanger.

The Free Flow plates are also well-suited for media that have a tendency to cause fouling, and are designed with the fouling factor in mind.

The plate channels allow for an efficient flow and heat transfer, in spite of the accumulated fouling, deferring the cleaning downtime.

This enables a sugar producer, for example, to operate at full capacity throughout an entire campaign without losing valuable production time and product output.



# Common food and beverage applications

## Beverages

- Carbonated soft drinks
- Sports drinks pasteurization
- Ice tea pasteurization

## Brewery applications

- Wort heater / cooler
- Condensate cooler
- Yeast cooler
- Beer cooler
- Pasteurization

## Dairy applications

- Raw milk cooling
- Milk pasteurization
- Yogurt cooling
- Ice mix pasteurization and cooling
- Cream pasteurization
- Cream / butter milk cooling
- Water cooling / intermediate storage
- Cheese milk pasteurization
- Whey pasteurization

## Egg processing

- Egg pasteurization
- Heating / cooling

## Fruit juice production

- Juice pasteurization
- Juice concentrate cooling
- Water heating



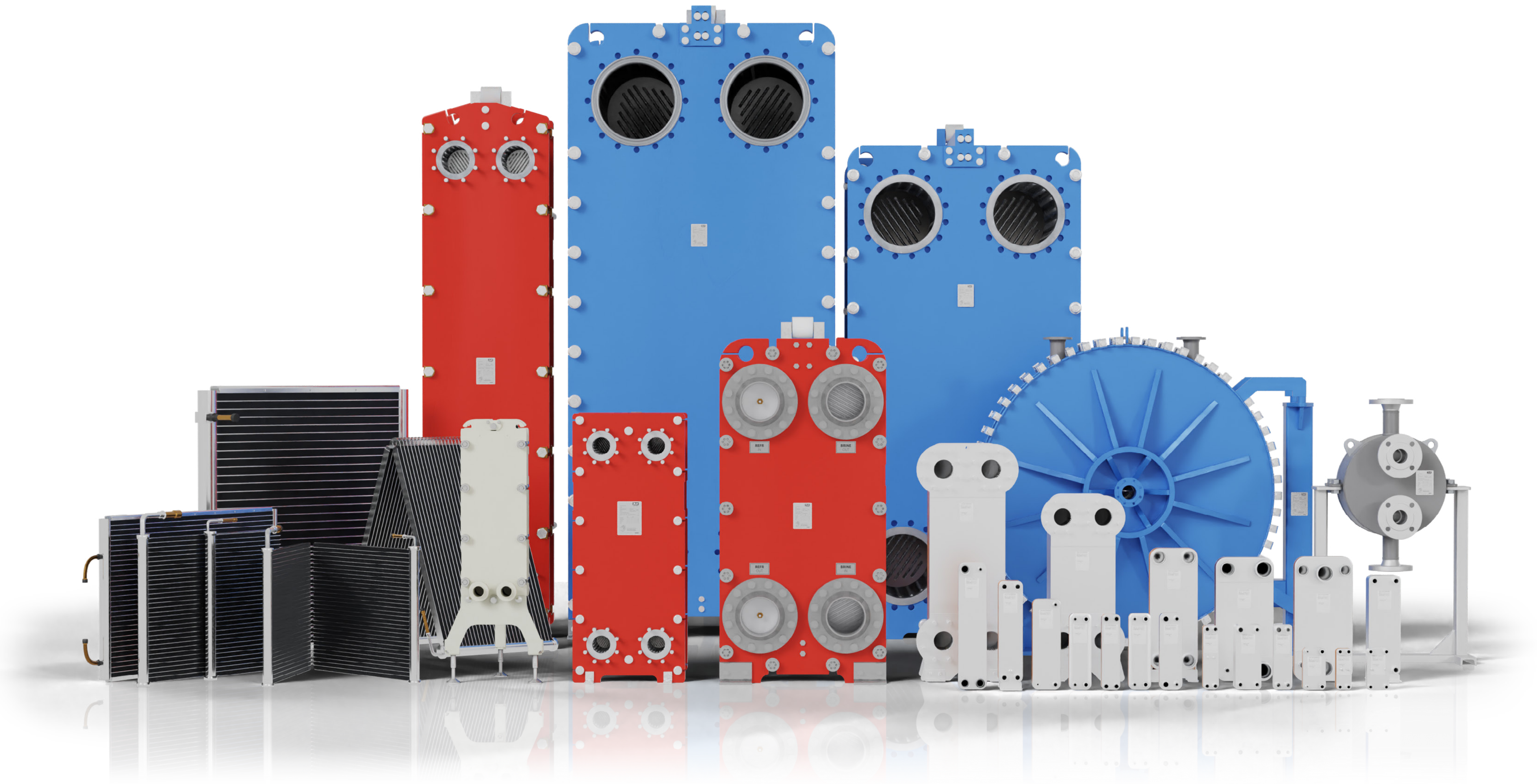


# Working with Danfoss means more

Not only do you get highly reliable, efficient, and innovative solutions – you also get a partner that is a world-leading supplier in a wide range of applications.

Our partnership gives you access to a wide range of benefits. From extensive application knowledge to a wide range of solutions and tools.

Do you want to discover more?  
Visit [heatexchangers.danfoss.com](https://heatexchangers.danfoss.com) to learn more about our heat exchanger solutions.





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