

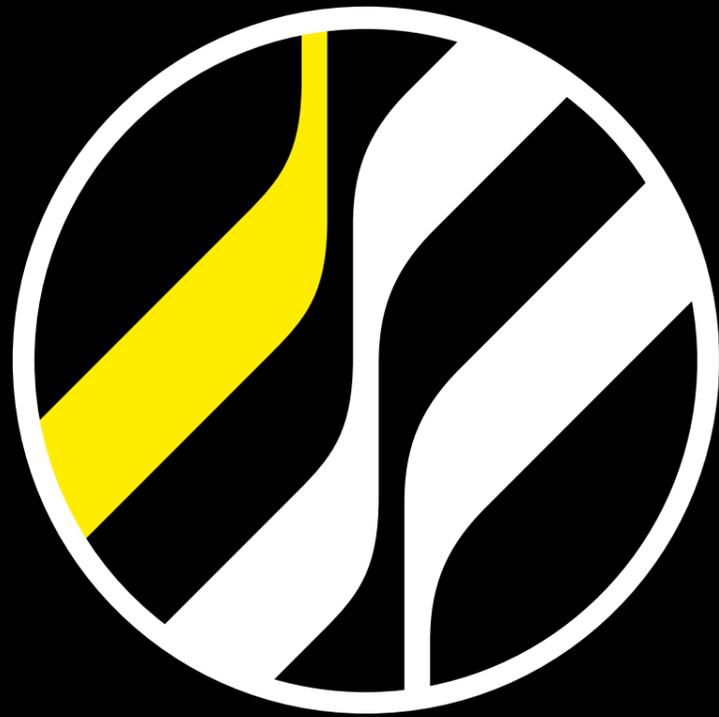
Kelvion



Product Line: Brazed Plate Heat Exchangers

TAILOR-MADE FOR THE MOST VARIED APPLICATIONS





EXPERTS IN HEAT EXCHANGE – SINCE 1920

Welcome to Kelvion! Where Heat Exchange is our Business. We are one of the leading global manufacturers of heat exchangers and have been providing solutions for almost every industrial application imaginable since the 1920s, specializing in customized solutions suitable for extreme environmental conditions - as of 2015 under the name of Kelvion.

With one of the most extensive selections of heat exchangers in the world, we are a well-known partner in many industries, including transportation, energy, oil and gas, the heavy industry, chemical and marine as well as sugar, food and beverage and the HVAC and refrigeration technology sector. Our products include Compact Fin Heat Exchangers, Plate Heat Exchangers, Single Tube Heat Exchangers, Transformer Cooling Systems, Cooling Towers and Shell & Tube Heat Exchangers.

Our many years of experience and in-depth expertise have made us specialists in this field. Our heat exchangers are designed specifically to meet the needs of the respective machine or equipment system, ensuring outstanding energy efficiency and reliability in any market segment. This gives our customers a cutting-edge over their competitors while also reducing operating costs over the long term.

As your heat exchange partner, we understand that outstanding and reliable after-sales services are critical for you, our customer, and we work alongside with you in close partnership supporting you throughout the full life cycle of your plant and equipment to ensure lasting business success.

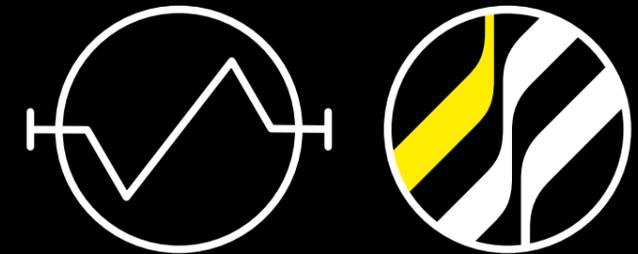
Kelvion – Experts in Heat Exchange.

KELVION – A TRIBUTE TO LORD KELVIN (1824 - 1907)

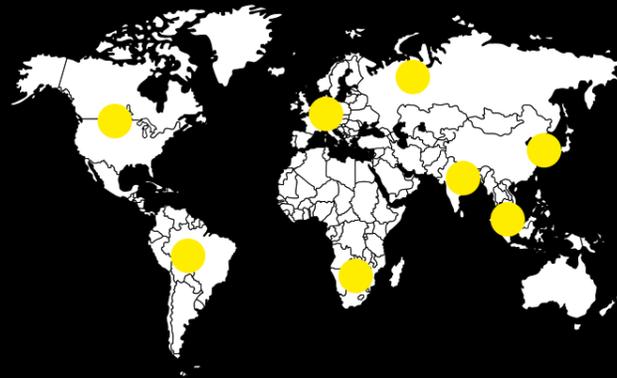


Lord Kelvin formulated the laws of thermodynamics and absolute units of temperature are stated in kelvin, in his honor.

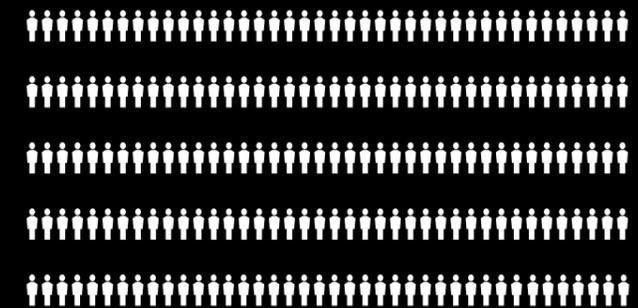
OUR LOGO – INSPIRED FROM THE SCHEMATIC FOR HEAT EXCHANGER



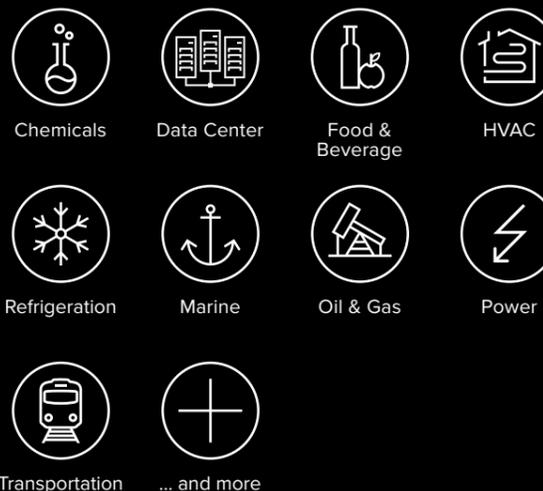
67 BRANCHES AND SALES PARTNERS WORLDWIDE



5,000 EMPLOYEES WORLDWIDE



YOUR MARKETS ARE OUR MARKETS



KELVION HAS A LONG HISTORY



Kelvion Plate Heat Exchangers

TAILOR-MADE SOLUTIONS

As the worldwide technology leader in the manufacture and development of plate heat exchangers, we have one of the most extensive product ranges on the market. Our product diversity varies from gasketed to brazed and even welded plate heat exchangers. This includes process-optimised series that are unique in their number and special functions. This makes us absolute specialists when it comes to developing tailor-made solutions for your applications.

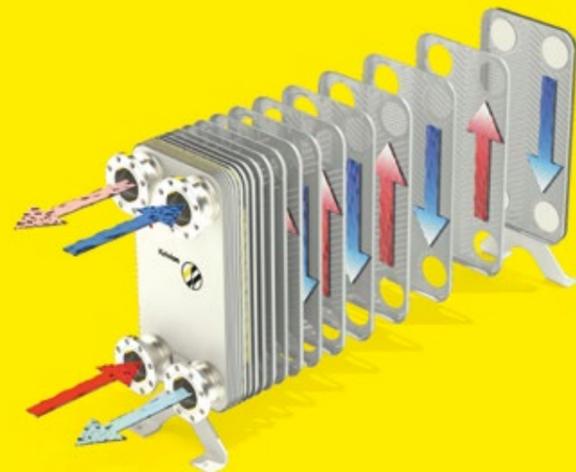
At Kelvion, we invest extensively in research and development. This enables us to continuously develop efficient plate types for new fields of application.

This commitment secures and extends our core competencies, to the benefit of our customers.

BRAZED PLATE HEAT EXCHANGERS

The product range of our brazed series offers the widest variety and flexibility in terms of size, brazing material, different connections, flow arrangements and accessories.

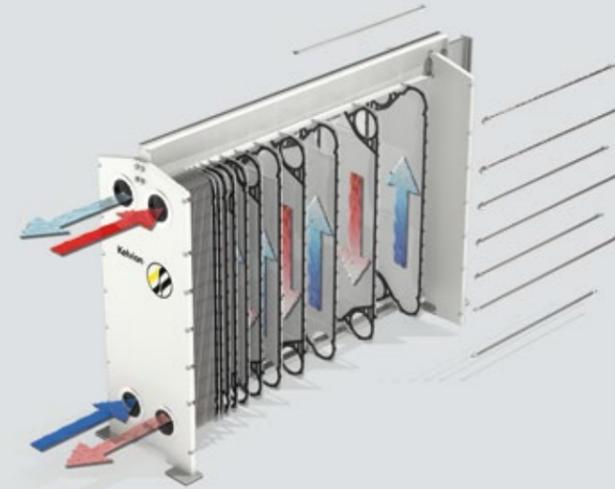
- ▶ Tailor-made economical design for the most varied applications
- ▶ Long lifetime
- ▶ Highest efficiency
- ▶ Highest quality



GASKETED PLATE HEAT EXCHANGERS

Designed with ease of maintenance in mind, our gasketed plate heat exchangers can be adjusted if requirements change and can easily be opened for cleaning – suitable for a wide range of applications with medium to large volume flows.

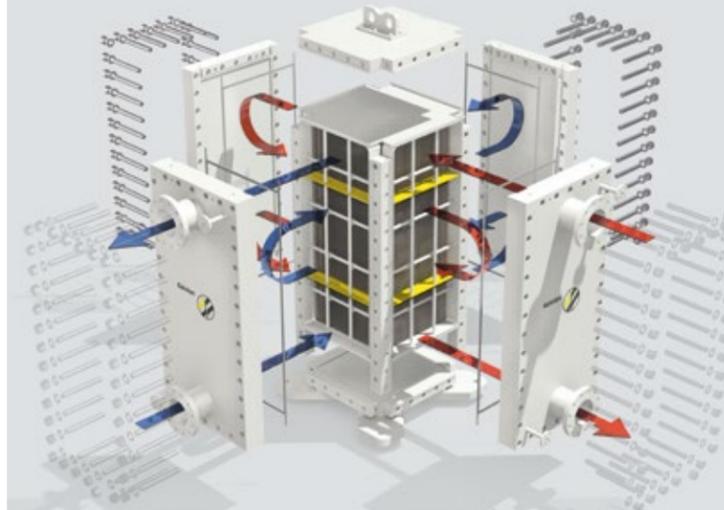
- ▶ High efficiency at low operating costs
- ▶ Wide application spectrum at lower investment costs
- ▶ High range of plate corrugations, connection sizes, plate widths and lengths
- ▶ Maintenance-friendly assembly and sealing technologies



WELDED PLATE HEAT EXCHANGERS

Combining high heat transfer coefficients of a plate heat exchanger with the advantages of rugged welded design, they are the perfect partner for demanding applications with medium to large volume flows.

- ▶ **K°Bloc:** Oil and gas, chemical and petrochemicals use. Withstands high temperatures and pressures.
- ▶ **K°Flex:** Efficient, turbulent heat transfer for power stations or applications in the sugar industry requiring high output density.
- ▶ **REKULUVO/REKUGAVO:** High-efficiency heat recovery for SCR Systems.



APPLICATIONS



Refrigeration



District Heating



Domestic Hot Water



Geothermal/
Heat Pump



Data Center



Oil Cooling



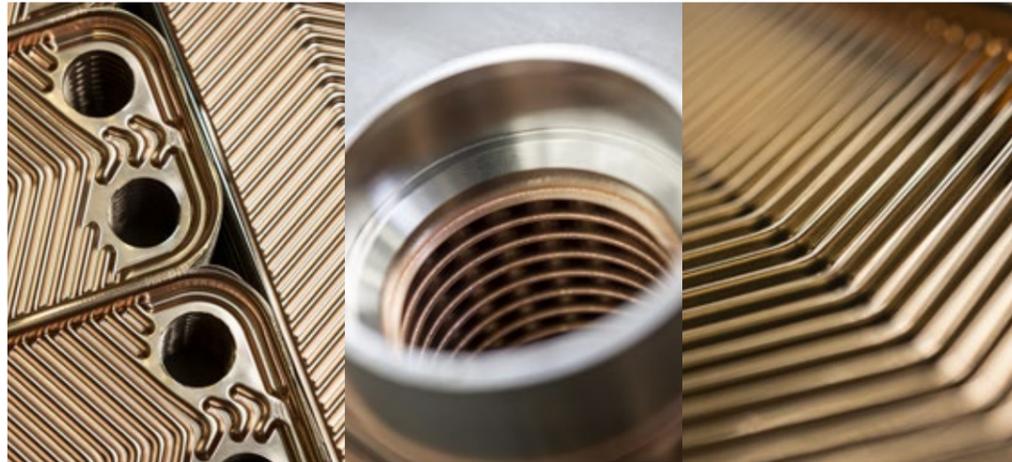
Automotive



Laser Cooling

Brazed Plate Heat Exchangers

LEADING TECHNOLOGY FOR ALL APPLICATIONS



Your global partner providing all industries with trusted Plate Heat Exchanger Technology and service where Expertise is needed. Reliable. Sustainable. Efficient.

Our brazed heat exchangers offer tailor-made solutions for the greatest possible range of applications. Thanks to the automated manufacture and compact design of our brazed series, we can assemble a customised heat exchanger in the shortest time possible.

We choose between copper- and nickel-brazed or Vacnox plate heat exchangers depending on the field of application. We look for the most economical solution from the various sizes and diverse accessories available to us and adapt them precisely to your requirements with customized connections.



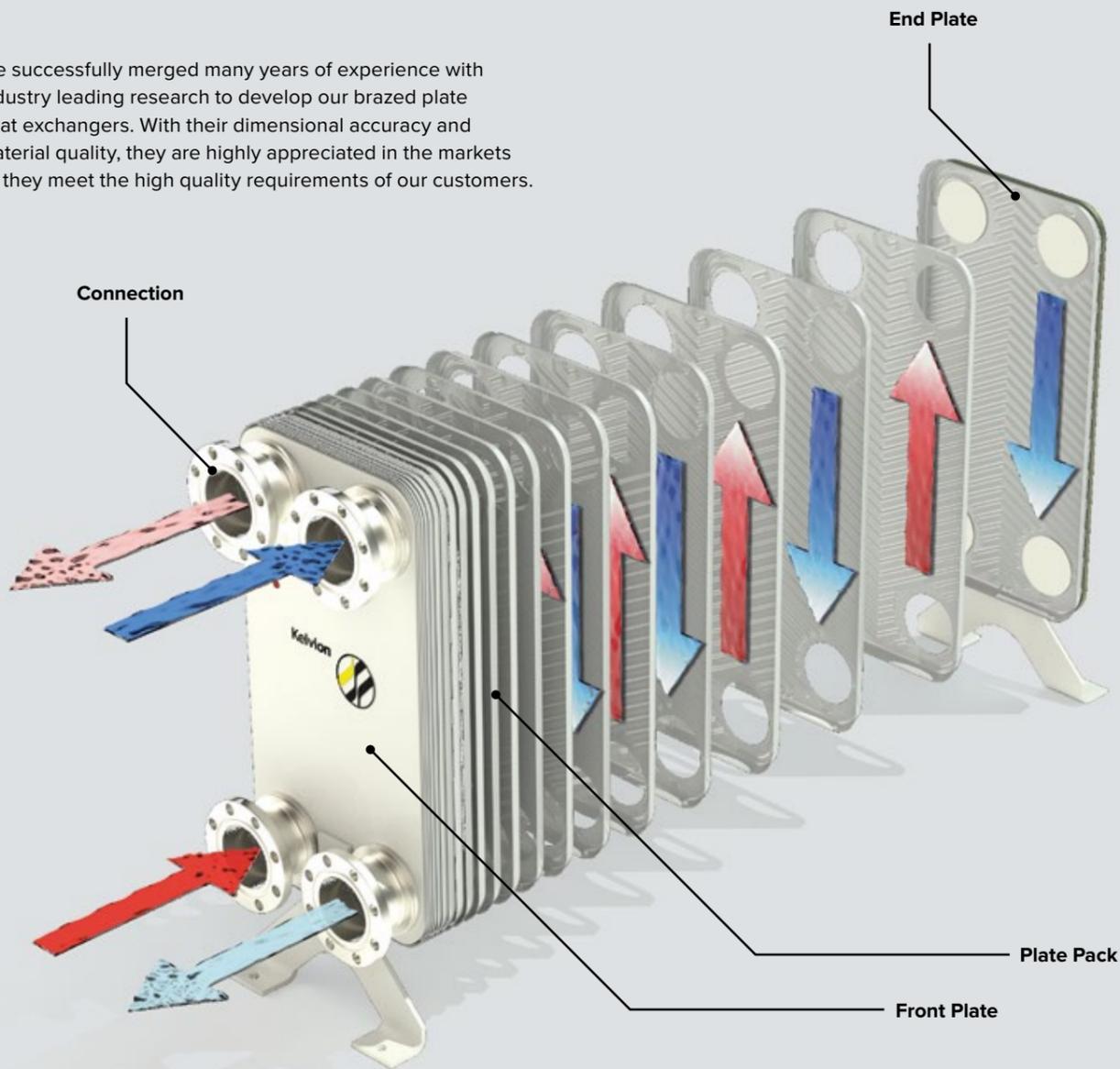
WHY CHOOSE KELVION?

- ▶ Global Application Sales & Service Network
- ▶ Deep Application & Product competence
- ▶ Reliable Partner
- ▶ Sustainable
- ▶ Efficient

Brazed Plate Heat Exchangers

QUALITY AND FLEXIBILITY

We successfully merged many years of experience with industry leading research to develop our brazed plate heat exchangers. With their dimensional accuracy and material quality, they are highly appreciated in the markets as they meet the high quality requirements of our customers.



Powerful models in a flexible range of size

The brazed plate heat exchangers from Kelvion offer solutions for the widest range of applications. Thanks to the compact design and simple installation Kelvion's brazed plate heat exchangers can be supplied as individual plate packs at short notice.

Brazed plate heat exchangers are made up of an individually defined number of corrugated stainless steel plates that are permanently bonded using copper or nickel in a special vacuum brazing process. They are then hermetically sealed without using any gaskets, thus allowing the highest operating pressures and temperatures.



PLATE SIZES

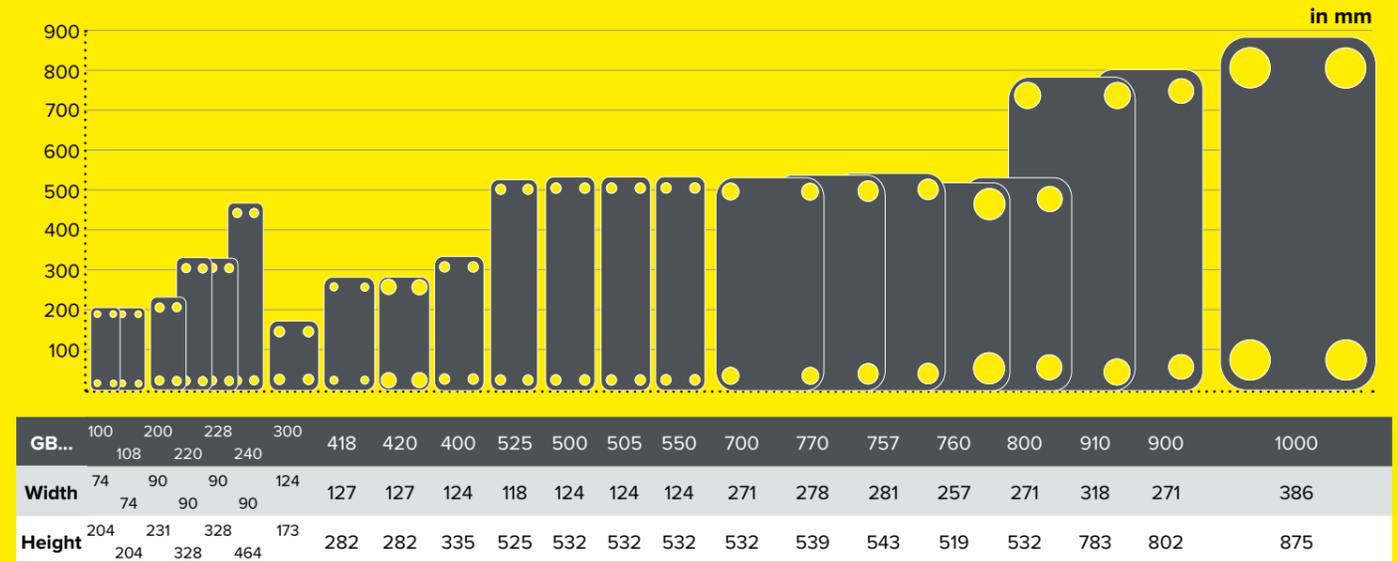
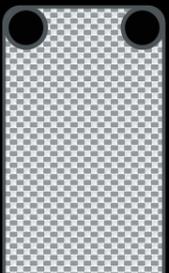


PLATE TYPES

CHEVRON	CONBRAZE	3 MEDIA	WIDE GAP	DOUBLE WALL
 <ul style="list-style-type: none"> ▶ Performance varying from low to medium to high theta ▶ Liquid-to-liquid and liquid-to-refrigerant applications ▶ High heat transfer ▶ Low to higher pressure drop ▶ Highest pressure rating ▶ 2 mm pressing depth 	 <ul style="list-style-type: none"> ▶ Increased performance ▶ Lower pressure drops ▶ Reduced pressing depth ▶ Appreciably less volume (approx. 20-25% less) ▶ More effective media circulation 	 <ul style="list-style-type: none"> ▶ Like chevron or ConBrazed corrugation but three-circuits ▶ Performance of high theta ▶ Liquid-to-refrigerant applications ▶ Highest heat transfer ▶ Medium pressure drop ▶ Highest pressure rating ▶ 2 mm pressing depth 	 <ul style="list-style-type: none"> ▶ Wide gap chevron type ▶ Performance of low theta ▶ Liquid-to-gas and refrigerant to-gas applications ▶ Medium heat transfer ▶ Lowest pressure drop ▶ Low pressure rating ▶ 2 mm pressing depth 	 <ul style="list-style-type: none"> ▶ Like chevron type but double wall ▶ Performance of medium theta ▶ Liquid-to-liquid and liquid-to-refrigerant applications ▶ Medium heat transfer ▶ Medium pressure drop ▶ High pressure rating ▶ 2 mm pressing depth

MATERIALS

OPERATING CONDITIONS

PLATE MATERIALS

EN	AISI
1.4404	AISI 316L
1.4547 (SMO 254)	AISI S31254

BRAZE MATERIALS

Cu	Copper foil
Ni	Nickel foil
VacInox	VacInox



+200 °C

-196 °C



140 barg

-1 barg

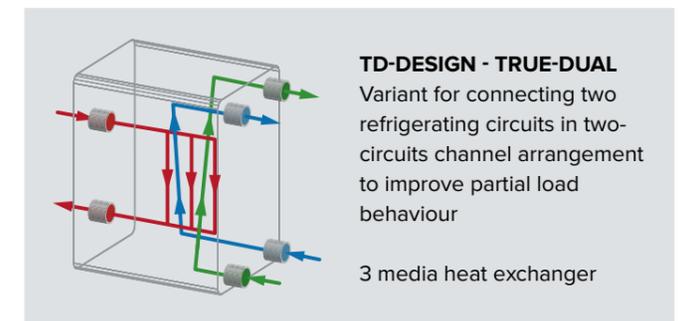
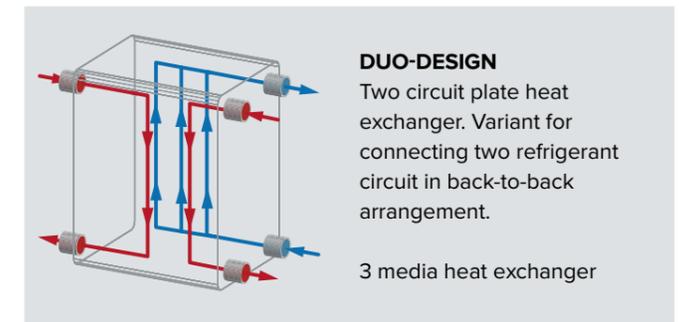
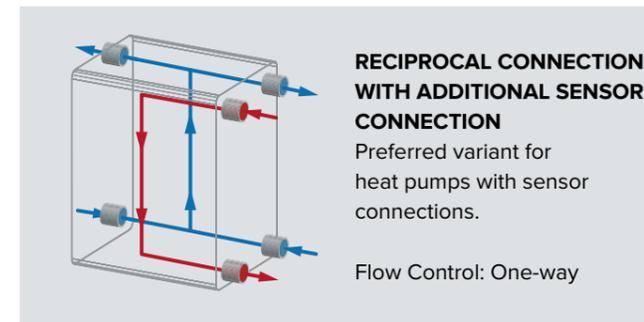
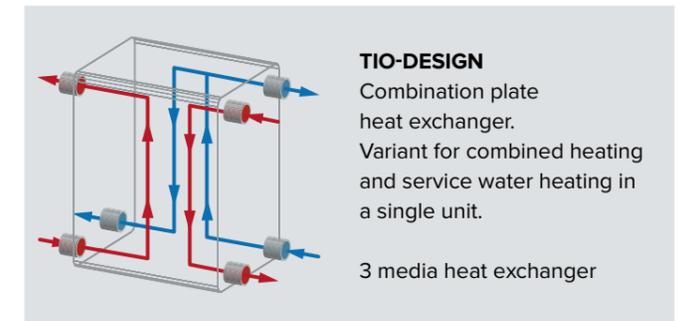
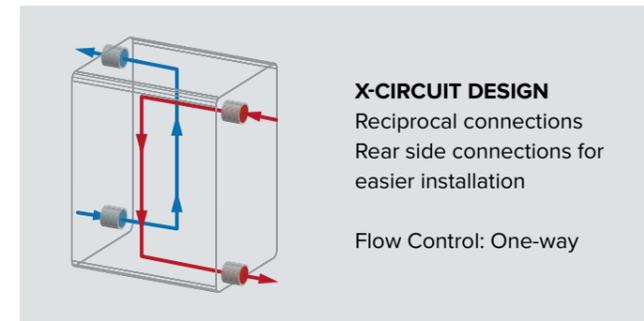
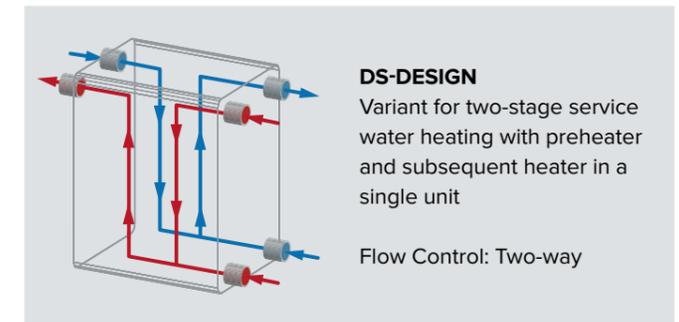
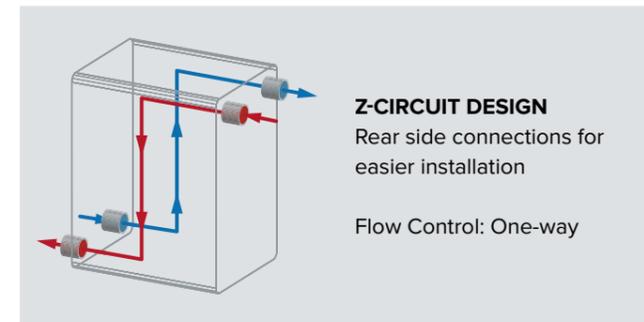
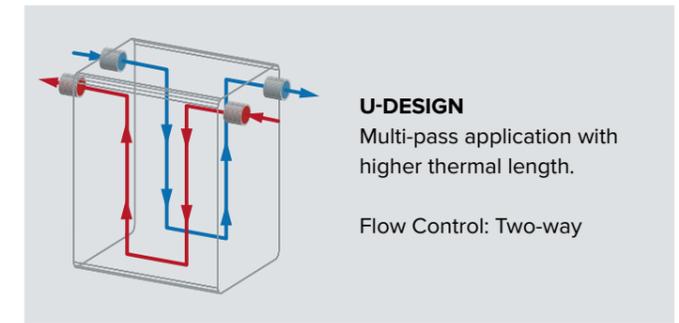
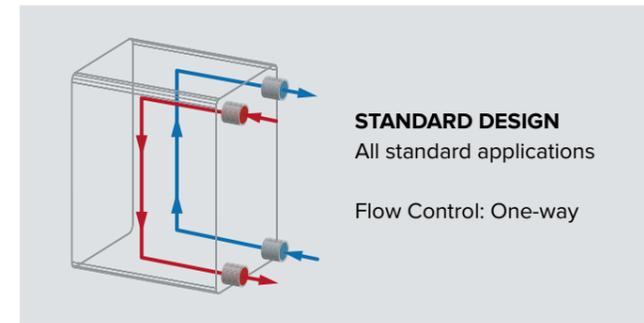


VacInox

VacInox, the solution for highest requirements of potable water heating applications and industrial processes. VacInox is Kelvion's technology for a solid and temperature resistant connection of stainless steel plates. It enables a compact design paired with a maximal corrosion and high pressure resistance at high temperatures up to 340 °C. Further applications are laser cooling, district heating and cooling as well as condensing and evaporating for ammonia systems.

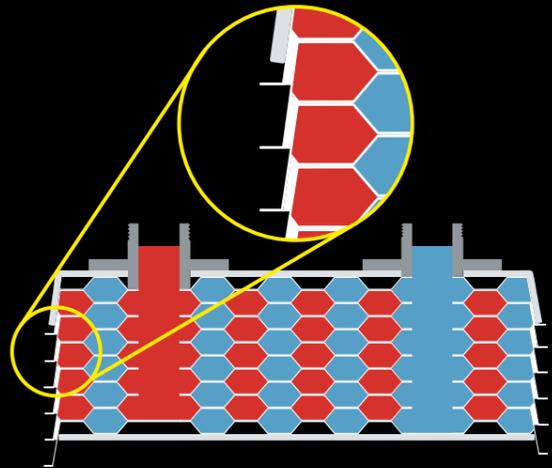
FLOW ARRANGEMENTS

Various connection types, as well as customer-specific connections for a wide range of applications



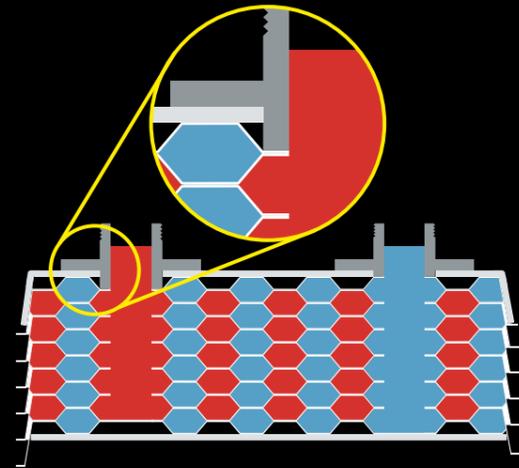
Other positions of connections (frontside/backside) on request
Number of additional connection on request

TECHNOLOGIES & INNOVATIONS



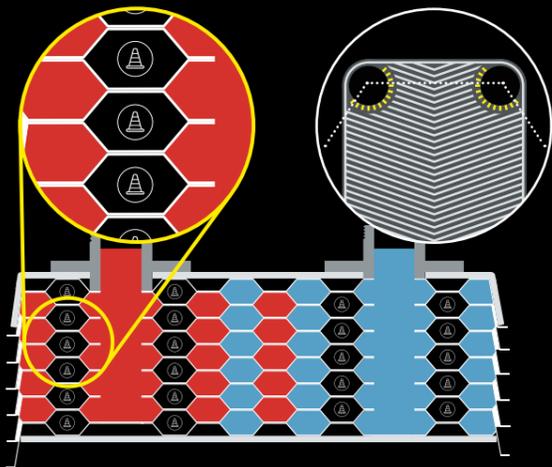
ROLLED EDGE LOCK SYSTEM

Guarantees a consistent braze joint at the plate overlap and makes a stronger and more leak-proof heat exchanger.



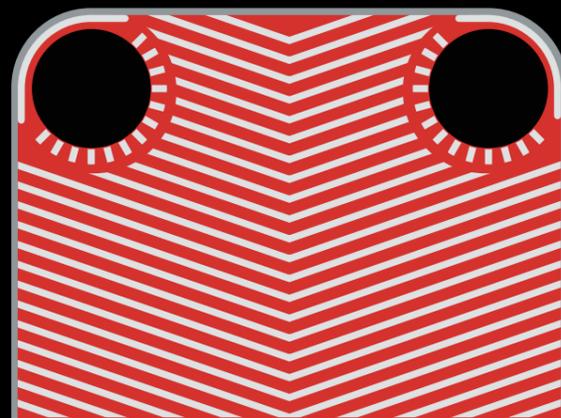
DOUBLE SEALING

Strong connections: Double brazing on the front plate and on the heat exchanger plate for a stable and tight connection in the nozzle.



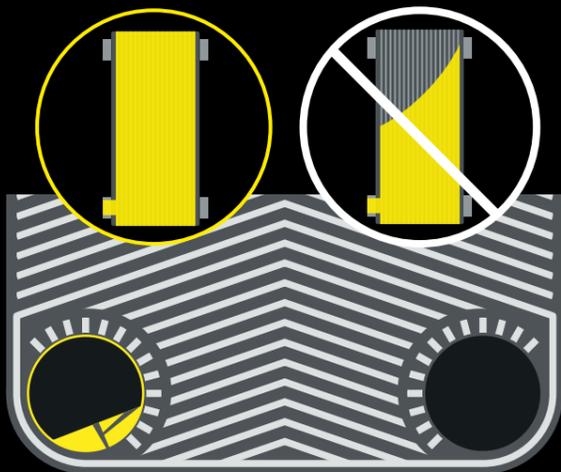
SAFETY CHAMBER

Absorbs the stress from thermal shock and pressure in the port area and prevents internal leaks and premature failure



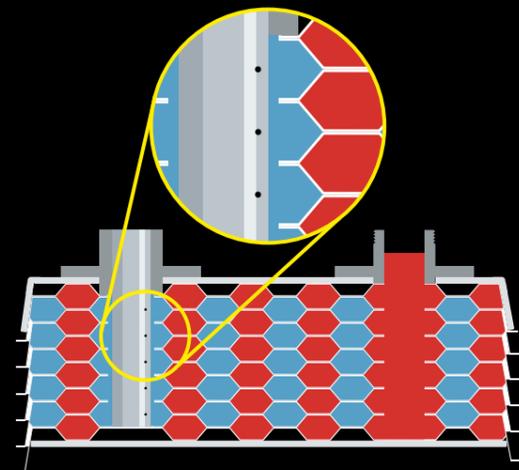
FULL FLOW

Ensures continuous flow around the port area to prevent freezing.



DELTA INJECTION

Refrigerant distribution system particularly developed for evaporator applications. Provides precise metering of refrigerant to the channels, guaranteeing the highest performance.



EQUIPE TECHNOLOGY

Ensures highest heat transfer performance thanks to even refrigerant distribution especially for critical refrigerants, tailored for customer-specific applications.

Brazed Plate Heat Exchangers

CERTIFICATIONS AND STANDARDS

Highest quality requirements in terms of dimensional accuracy and material quality

Use of international standards:

- ▶ DIN EN ISO 9001:2015 (Quality)
- ▶ VDA 6.1 (Automotive, Quality in serial production)
- ▶ DIN EN ISO 14001:2015 (Environment)
- ▶ DIN EN ISO 50001:2015 (Energy Efficiency)

AVAILABLE CERTIFICATIONS

- ▶ **Directive 2014/68/EU of the European Parliament and of the council of 15 May 2014 on the harmonisation of the laws of the Member States relating to the making available on the market of pressure equipment**
2014/68/EU European Pressure Equipment Directive (PED)
Safety of pressure equipment in the EU
 - ▶ **ASME Boiler & Pressure Vessel Code Section VIII Division 1, ASME U, UM**
American and globally accepted standard for design, manufacturing and testing of pressure vessels
 - ▶ **DIN EN 13445-3**
European standard for design manufacturing and testing of unfired pressure vessels
 - ▶ **UL 207 (USA Canada)**
Refrigerant-Containing Components and Accessories, Nonelectrical, certified for the United States and Canada
 - ▶ **CSA 22.2 No. 140.3 (Canada, USA)**
Refrigerant-containing components for use in electrical equipment certified for Canada and the United States
 - ▶ **CRN (Canada)**
Canadian design registration of pressure vessels
 - ▶ **KHK (Japan)**
Japanese High pressure safety standard for refrigeration containing pressure equipment
 - ▶ **KIWA (the Netherlands)**
SVGW (Switzerland)
WRAS (UK)
Approved and registered products for equipment in contact with drinking water
 - ▶ **EAC (Eurasian Conformity Mark)**
Product certification for Eurasian Economic Union, replacing former GOST-R certification
 - ▶ **Lloyd's register of Shipping (LR)**
DNV GL
Bureau Veritas (BV)
American Bureau of Shipping (ABS)
Registro Italiano Navale (RINA)
Nippon Kaiji Kyokai (ClassNK)
China Classification Society (CCS)
Korean Register of Shipping (KR)
Russian Maritime Register of Shipping (RS Class)
Assessed design of pressure equipment for use in ships and off-shore equipment
- ... and many more, just challenge us!

RELIABLE OPERATING PARTNERS



GBS SERIES

A brazed all-rounder that can be used for applications up to 31 bar and +200°C.

Applications:

- ▶ Heating/service-water systems
- ▶ Floor heating
- ▶ Coolers and condensers
- ▶ Economizer
- ▶ Refrigerant evaporator
- ▶ Oil coolers and many other industrial applications



YOUR BENEFITS

- ▶ Highest flexibility
- ▶ Compact design
- ▶ Optimal corrugation design
- ▶ Wide range of applications
- ▶ Solid construction
- ▶ Precision-made heat exchanger

INDUSTRIES



HVAC



Power



Heavy Industry



Refrigeration

GBH SERIES

The GBH Series is designed for pressures up to 45 bar and is most suitable for applications with the environmentally-friendly R410A refrigerant.

Applications:

- ▶ Evaporators in air-conditioners
- ▶ Heat pumps for heating and hot water production
- ▶ Process cooling
- ▶ Economizer
- ▶ Coolers and condensers



YOUR BENEFITS

- ▶ Highest flexibility
- ▶ Compact design
- ▶ Optimal corrugation design
- ▶ Wide range of applications
- ▶ Solid construction
- ▶ Precision-made heat exchanger

INDUSTRIES



HVAC



Power



Heavy Industry



Refrigeration

GBE/GKE SERIES

Our "E" stands for Eta: greatest efficiency at lowest costs. These efficient plate heat exchangers give you total control: Size, weight, output, quality and economy.

Applications:

- ▶ Underfloor and conventional heating
- ▶ Potable water heating
- ▶ Hydraulic applications with low pressure



YOUR BENEFITS

- ▶ Modular design
- ▶ Compact and cost-effective
- ▶ ConBraze design availability
- ▶ Low investment costs
- ▶ High efficiency

INDUSTRIES



HVAC

GKS SERIES

The GKS Series – highest transfer performance by means of a completely new plate geometry using the improved heat transfer of concave/convex vortex cells.

Applications:

- ▶ Central domestic water heating
- ▶ Home stations
- ▶ Heat Pumps for heating and potable water heating
- ▶ District Heating Stations



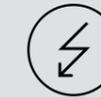
YOUR BENEFITS

- ▶ Increased efficiency – greater output
- ▶ Appreciably less refrigerant
- ▶ Plate corrugations adapted to the application
- ▶ Higher compressive strength
- ▶ Distinctive reduced filling volume
- ▶ Reduced operating costs

INDUSTRIES



HVAC



Power



Heavy Industry



Refrigeration

GWH SERIES

The GWH Series – the solution for applications with high mechanical and thermal loads. Robust, compact heat exchanger for industrial applications with an operating pressure of up to 55 bar.

Applications:

- ▶ Cascade applications
- ▶ Refrigeration
- ▶ Railway applications
- ▶ Marine applications



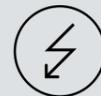
YOUR BENEFITS

- ▶ High permanent pressure resistance
- ▶ Cost-effective
- ▶ Robust design
- ▶ Solid construction
- ▶ Compact, space-saving design
- ▶ Low weight

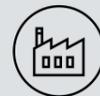
INDUSTRIES



HVAC



Power



Heavy Industry



Refrigeration

GKH SERIES

Operating pressures up to 50 bar and new plate geometry create an apparatus that satisfies the highest requirements.

Applications:

- ▶ Heat pumps for heating and potable water
- ▶ District heating stations
- ▶ Central domestic water heating



YOUR BENEFITS

- ▶ Greatest pressure resistance
- ▶ Distinctive reduced filling volume
- ▶ Reduced operating costs
- ▶ Increased efficiency – greater output
- ▶ Compressive strength

INDUSTRIES



HVAC



Power



Heavy Industry



Refrigeration

GML SERIES

This series is suitable for refrigeration and airconditioning applications, in which pressures of up to 75 bar must be maintained.

Applications:

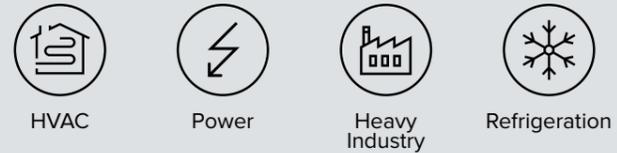
- ▶ High pressure refrigeration applications
- ▶ CO₂ applications



YOUR BENEFITS

- ▶ Compact and space-saving
- ▶ CO₂ stands out as a carbon-neutral refrigerant
- ▶ Environment friendly
- ▶ Powerful plate design
- ▶ Safe in high pressure applications

INDUSTRIES



GBH-HP SERIES

A brazed plate heat exchanger with a pressure frame for transcritical and subcritical CO₂ applications and industrial fields of application with system pressures up to 140 bar.

Applications:

- ▶ CO₂ heat pumps
- ▶ CO₂ supermarket cooling
- ▶ Oil cooling
- ▶ Industrial heating and cooling
- ▶ Power plant technology



YOUR BENEFITS

- ▶ High permanent pressure resistance
- ▶ Long lifetime
- ▶ Low investment costs
- ▶ Solid frame construction
- ▶ CO₂ in a transcritical area

INDUSTRIES



DW SERIES

DW stands for "Double Wall" and serves to minimize the risk of mixing of the media of primary and secondary side due to its double-walled, hermetically-sealed heat exchanger plates at pressures up to 45 bar.

Applications:

- ▶ Potable water heating
- ▶ Applications for safety heat exchangers
- ▶ Oil cooling



YOUR BENEFITS

- ▶ New plate design
- ▶ More pressure resistant and efficient
- ▶ Double-walled safety construction
- ▶ Reliable media separation
- ▶ Powerful
- ▶ Space-saving

INDUSTRIES



GVH-HP SERIES

Free of non-ferrous metals brazed plate heat exchanger for industrial applications with an operating pressure of up to 46 bar combining the advantages of brazed and gasketed heat exchangers.

Applications:

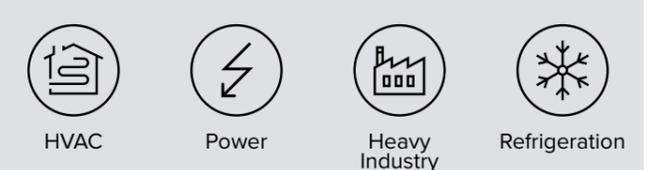
- ▶ Ammonia refrigeration plants
- ▶ Evaporators and condensers in cascade systems



YOUR BENEFITS

- ▶ High thermal efficiency
- ▶ High operating pressure
- ▶ Compact design and minimal space requirements
- ▶ Free of non-ferrous metals

INDUSTRIES



TD SERIES

True-dual-circuit evaporator represents constant high efficiency. A brazed heat exchanger combining two refrigerating circuits with a water or solar circuit.

Applications:

- ▶ Refrigeration plants and heat pump systems
- ▶ Evaporators and condensers in refrigeration systems
- ▶ Industrial heating and cooling



YOUR BENEFITS

- ▶ Diagonal flow principle for optimal transfer surface
- ▶ Highest degree of flexibility & wide range of applications
- ▶ Compact & robust design
- ▶ Optimum is achieved even when operating at partial load
- ▶ Both refrigerating circuits in 100% contact with the water/solar circuit

INDUSTRIES



HVAC



Heavy Industry



Refrigeration

GNS SERIES

Copper-free brazed plate heat exchangers offer all advantages of a brazed plate heat exchanger, yet thanks to the special solder they are significantly more resistant to corrosive media.

Applications:

- ▶ Laser cooling
- ▶ Semiconductor industry
- ▶ Applications with deionised water
- ▶ Ammonia systems
- ▶ Applications with corrosive fluids



YOUR BENEFITS

- ▶ Compact and cost-effective
- ▶ High corrosion resistance
- ▶ Wide range of applications

INDUSTRIES



HVAC



Power



Heavy Industry



Refrigeration

GVH SERIES

Our new, unique and revolutionary technology for brazing stainless steel plates enables both, a compact design and the greatest corrosion resistance. Vacnox stainless steel plate heat exchangers are the answer for the most stringent requirements in potable water supply and in critical industrial applications up to 35 bar.

Applications:

- ▶ Potable water heating
- ▶ Evaporator and condenser for Ammonia systems
- ▶ Laser cooling
- ▶ District heating



YOUR BENEFITS

- ▶ Free of non-ferrous metals
- ▶ High corrosion resistance
- ▶ High pressure resistance
- ▶ Compact design
- ▶ High temperature resistance
- ▶ Low investment costs

INDUSTRIES



HVAC



Power



Heavy Industry



Refrigeration

XCR SERIES

The XCR Series uses stainless steel plates of 1.4547 (SMO 254) and is resistant to chloride content, as is usually found in pool technology.

Applications:

- ▶ Swimming pool applications
- ▶ Applications with corrosive fluids



YOUR BENEFITS

- ▶ Long service life due to high-quality stainless steel
- ▶ High corrosion resistance in the face of high chloride content

INDUSTRIES



HVAC

MAIN APPLICATIONS



HEAT PUMPS

The use of heat pumps means pleasant temperatures all year round. They ensure economical water heating. The heat pump can be connected to various heating systems such as underfloor heating, air conditioning systems or radiator heating. Heat transfer plays a role in many applications in heating, air conditioning and ventilation technology. Inexpensive and efficient Kelvion plate heat exchangers are often used here.



DOMESTIC HOT WATER (DHW)

Domestic Hot Water Plate Heat Exchangers can be supplied as a Gasketed Plate unit or supplied as a Brazed Plate unit. In practice both types of heat exchangers transfer thermal energy from the hot to the cold fluid and ensure that the heat is transferred from the primary circuit to the secondary circuit highly efficiently. Brazed Plate Heat Exchangers are commonly used in heating and DHW systems or industrial and refrigeration applications. The combined stainless steel plate and copper/nickel/VacNox brazing construction forms a strong, robust and powerful unit.



REFRIGERATION

With its ingenious construction of corrugated plates, the BPHE offers you one of the most efficient ways to transfer heat from one medium to another. The modular concept of the BPHE with totally customizable parts allows you to find the right solution for any refrigeration system. The BPHE is a cost-effective solution that saves space, saves refrigerant, and saves energy.

OUR SERVICE IN THREE WORDS: PEACE OF MIND



START-UP & ONSITE SERVICES

We ensure that our products are delivered safely and are fully validated to give a robust and reliable performance over as long a life cycle as possible.

And should you encounter an issue with your equipment after it is fully commissioned, our team of experienced Field Service technicians is at your disposal to come to your site to investigate and correct any malfunctions.

- ▶ Pre-commissioning supervision
- ▶ Commissioning supervision



REPAIRS, OVERHAULS & MAINTENANCE

Unscheduled downtime can be disastrous.

That is why our trained engineers are ready to respond quickly in case of an emergency, and review and repair components while keeping any disruption to your production to a minimum. Any overhaul work is carried out quality-oriented in our service centers or on your site with the supervision of our qualified staff.

Regular inspections and maintenance help to reduce costs, extend the lifetime of your Kelvion products and achieve reliable performance.

- ▶ Cleaning services
- ▶ Reconditioning
- ▶ Repair
- ▶ Spare parts



MONITORING, CONSULTING & TRAINING

Knowledge of the equipment's condition allows you to secure reliable production, improve safety and energy efficiency, increase equipment lifetime and prevent breakdowns. We offer consultancy services that take into account the special features of your process, making use of our profound design knowledge of heat exchange equipment. And we work closely with you to develop the exact solution that is best tailored to your needs.

- ▶ Remote support
- ▶ Technical documentation
- ▶ Training
- ▶ Troubleshooting
- ▶ Maintenance tools
- ▶ Condition audit
- ▶ Performance audit



UPGRADES & REPLACEMENTS

We replace components to keep our heat exchangers running smoothly and to prevent downtime. Where parts or components have become obsolete due to age, we will suggest a suitable upgrade. In these cases, we can often also suggest new, state-of-the-art technology which additionally enhances the performance and reliability of your process.

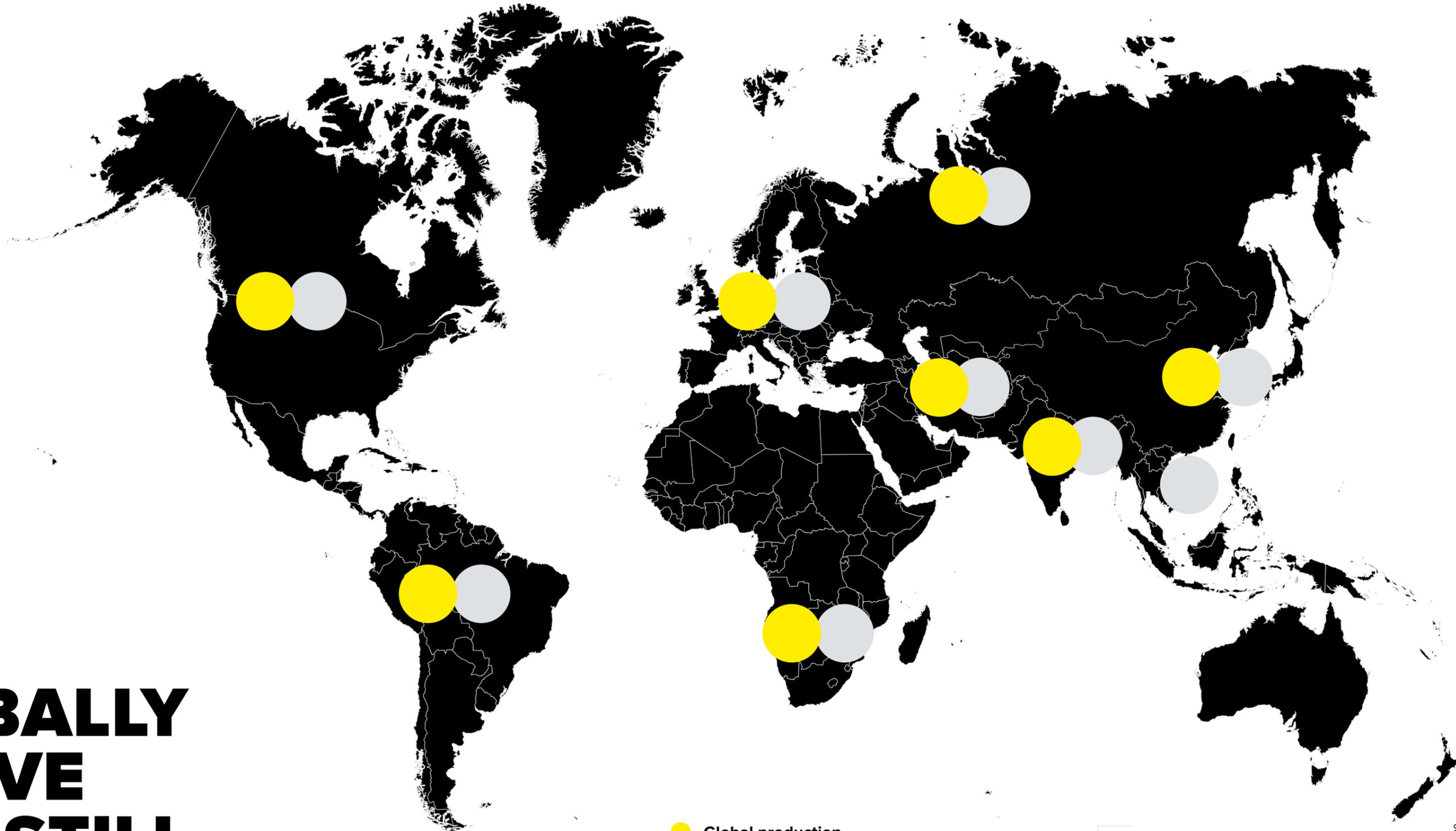
- ▶ Equipment upgrades
- ▶ Redesign
- ▶ Replacement and retrofit

ALL BRAND SERVICE

Besides being experts in our own products and our former brands, we also have the expertise to service other brands.

PERFORMANCE AGREEMENTS

We offer individually tailored service solutions for the services in our extensive portfolio. They maximize your return on investment, ensure continual performance excellence and make budgeting simpler.



GLOBALLY ACTIVE AND STILL CLOSE BY

No matter where your market is, regardless of country, we are never far away. We are always happy to answer any questions you may have and meet your requirements. Even the largest, most successful project begins with an initial, profitable conversation. We look forward to hearing from you.

- Global production footprint
- Global sales and service



Just scan this QR code with your smartphone or visit our website at: www.kelvion.com – there you will find a highly competent contact in your immediate vicinity.

www.kelvion.com